

The CHILDREN'S NEWSPAPER

AND CHILDREN'S PICTORIAL

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WHERE MONEY IS WORTH NOTHING

ELEMENT LIKE AN IMP

RADIUM LOSES ITSELF ONCE MORE

Strange Story of a Substance which Almost Defies Us

SERVANT HARD TO MASTER

There seems something impishly elusive about radium.

The last and most difficult of all the known elements to be discovered, it is the most difficult to keep in custody, and is constantly being lost, mislaid, or scattered. And even when held fast it may be more dangerous than dynamite to its custodian.

The London Hospital has had a great shock with the little store of the precious substance possessed there. A tube containing fifty milligrammes of radium bromide was broken, and just over eleven milligrammes of the radium salts were lost. An insurance company has paid £147 for the loss, but the value of radium to the hospital cannot be truly set forth in terms of money.

The Missing Tube

There is so little of it available, and there is such need for its aid in surgery, that no sum can make good an actual decrease in supplies. Despair comes when a tiny accumulation of radium goes—and it is always threatening to go.

Not long ago a hospital patient swallowed the tube of radium with which he was being treated. Another tube was missing for days. But the greatest disaster of all descended upon the very first supply ever obtained, for every speck of it was scattered.

Years of hard work produced a tiny phial of radium. Madame Curie, discoverer of the mystic element, entrusted this phial to her husband, who had assisted in her researches.

Surprise and Mystery

One day, as he was demonstrating in a laboratory, there was a ping and a pop, and the tube was on the floor in a thousand fragments. The sole supply of extracted radium was scattered, indistinguishable from the dust.

Never before or since has a room received so scrupulous a brushing as that which followed the accident. Every grain on the boards was swept up, boiled, baked, and crystallised. The recaptured radium was put in a stouter tube.

This M. Curie carried for safety in his waistcoat pocket. The result was as if the radium were some little evil spirit rebellious against captivity, for it burned holes in his flesh!

That is how we first learned that radium, won from its ore at such pains, is deadly in its continuous action, though almost magically benevolent for brief, controlled applications.

Radium, by far the most precious substance ever heard of, comes to us mainly from rubbish, from cast-away deposits, or dumps, for which miners have had no use.

Rising on Silent Wings



The Germans are not alone in their attempts to solve the problem of motorless flight, although so far they have had the greatest success. Here we see in full flight an airman at Clermont-Ferrand, in France, where several good trips were made on planes without engines. The absence of mechanical noise as well as power is one of the striking features of motorless flying.

Marie Curie and her husband, clever as they were, were two of the poorest creatures on earth when toiling in the first great pursuit of it. They lived in a tiny, squalid cottage on the outskirts of Paris; they worked in a shed, where broken window-panes and cracks in the walls were stopped up with old sacking.

That was the cradle of the first collection of the royal element, an element so rare that the fortune of the richest man on earth could not buy a spoonful of the pure substance.

Yet, though so precious to us, in the earth which gives it birth radium is only a means to an ignoble end. Radium decays and goes off very slowly in the form of helium, and helium becomes a base metal. The plumber fits our gas-stoves with it; the cottager with

lead windows has it in his casements. For the priceless radium, changed first to helium, turns in time to lead.

It is as if the resplendent butterfly reversed nature and transformed itself into a loathsome grub. It is all wonder, surprise, and mystery, this newly-found and impish servant Radium.

THE ICE BUS

A remarkable bus has been invented for carrying passengers across the ice between Helsingfors and Sveaborg, in Finland. The ice bus holds twenty passengers.

It is driven by a large aeroplane propeller in the rear, and is fitted with three runners, two abreast and one behind with which the driver steers the bus. He uses it like a rudder.

PHANTOM FLEET SHIPS THAT HAVE GONE FROM THE SEA

Mystery of a Vessel Seen by the Eskimos

WILL FLYING MEN FIND SHIPS IN THE ARCTIC ICE?

A party of Eskimos hunting walrus in the Far North have just solved a mystery of the sea.

In December, 1915, a Russian steamer, the Polotofski, was caught in the ice at St. Michael in the Bering Sea and disappeared the following spring during a terrific storm off Cape Nome. Since then nothing has been heard of her, and it was thought that she must have been smashed to pieces or sunk.

Now, however, the Eskimo walrus-hunters, in a region far away from any visited by white men, have seen the missing steamer. They were close enough to discern the name Polotofski, and arranged to board the vessel the next morning, but during the night the wind changed, and the ship was swept away with the ice to the north, and was again lost to sight.

The Ice King's Realm

Every winter these Eskimo hunters of the north declare that they see ice-imprisoned ships with broken masts and torn rigging, and there seems no reason to doubt their stories. If we could only get to know the names of these phantom ships in the Ice King's realm we might have the solution of many a mystery of the sea that has perplexed mariners for a generation or two.

One night in the autumn of 1897, during a great gale, eight whaling vessels that were ice-locked were carried north with the ice into the land of forgetfulness. Most of the crews escaped, but some remained on board, and from that time to this neither they nor the ships have been heard of again. Probably they are somewhere in the ice pack and may be among the ships seen by Eskimo hunters.

What the Hunters See

In 1845 two ships of the British Navy, the Erebus and Terror, set out under Sir John Franklin to make the North West Passage. They were last seen in Baffin Bay, but afterwards disappeared with their crews between 1848 and 1854. England and America sent out 15 expeditions and spent thousands of pounds in trying to discover their fate, but no definite news has ever come to light, although traces of records of the missing ships were found and brought home. They, too, may be among the phantom fleet of which a glimpse is occasionally caught by the Eskimos.

Perhaps when the aeroplane is used by Arctic explorers, enabling them to reach regions at present inaccessible by other means, some of these missing ships may be found, and the last records of their crews will tell us the story of their fate.

SORROWS OF GENIUS TRAGEDIES HID IN BOOKS

Why Australia Buried a Poet
with High Honour

MELANCHOLY OF MASTERPIECES

The other day thousands of people lined the route to the cemetery and worshippers packed the cathedral at Melbourne, New South Wales, for the burial of Mr. Henry Lawson, the Australian poet and author. It was a State funeral for a man who, though he had done much to enrich the literature of the island continent, had been known in life as everybody's friend but his own.

Someone asked in the New South Wales Parliament why so signal a distinction had been conferred upon such a man. The Prime Minister made a surprising reply:

"An officer in my department informed me that, unless the State Government interposed, Mr. Lawson would be buried as a pauper. I therefore ordered a State funeral, and the Federal Government afterwards ordered a Commonwealth funeral."

Arrested After Death

Greater men than Henry Lawson have had as miserable lives, without as honourable an end, and not all by their own fault. Laurence Sterne, whose *Tristram Shandy* is a classic for grown-ups, died in lodgings where servants stole his clothes as the breath passed from his body; and body-snatchers stole his wasted frame from the grave and sold it for dissection to a surgeon—who recognised the features in time.

Sheridan, orator, statesman, author of *The School for Scandal* and other stage classics, was actually arrested after death for debt. Bailiffs entered the silent chamber of death by a trick, and, touching the cold forehead, said: "We arrest the corpse in the King's name for a debt of £500."

Not until friends had subscribed the sum could the body be borne to the grave. Sheridan was carried like a prince to Westminster Abbey, straight from the hands of the bailiffs.

Poor Author of Robinson Crusoe

The master who gave us *Robinson Crusoe* was a bankrupt and prisoner; the author of *Don Quixote* was long a galley slave; Oliver Goldsmith sold the Vicar of Wakefield for £60 to clear out the bailiffs; and Dr. Johnson, who carried off the MSS. and effected the bargain, was himself imprisoned for a £5 debt when his Dictionary had made him famous throughout Europe.

The sum which sent the great Samuel Johnson to gaol just equalled that paid to Milton for *Paradise Lost*, and even that amount might have prolonged the life of Spenser, creator of the immortal *Faerie Queen*, who died heart-broken and poor, close by Westminster Abbey where he was to be entombed; and where Shakespeare and all his contemporaries of that grinding yet golden age were to write sonnets and throw them, with their pens, upon the coffin.

The Tears in Books

And in such a connection one remembers splendid old John Stow, who gave up tailoring to write priceless chronicles of England generally, of London in particular. Very poor and ailing was old John as he travelled in quest of materials for his book. Today we give an actor's widow £150 a year from the Civil List; then our unspeakable sovereign James I. gave immortal old John a licence to beg!

Our classical literature is stained with many a tear; the turning of its pages brings to us the memory of many a sigh from the broken hearts of its writers.

SOMETHING LIKE A MIRACLE Man Comes Back from the Grip of Death

HEART RESTORED FOR 27 HOURS

Last week at St. Bartholomew's Hospital, Dr. H. B. Russell, a Harley Street specialist, performed an operation which seemed like a miracle.

The surgeons were removing septal tonsils from a man when the patient's heart and breathing stopped. The steps usual in such cases were promptly taken: artificial respiration was applied and strychnine injected. These measures failed, however, and an injection of a strong drug straight into the heart through the chest-wall was also futile, and the man seemed quite dead.

But Dr. Russell did not give up. He made a bold cut and massaged the heart. Still the heart would not beat, and as a last resort he cut through the diaphragm into the heart's bag and so reached and compressed the heart itself. As a result of these heroic measures, and a further injection of the drug adrenalin, the heart finally began to beat again, and respiration was restored.

For fifty-five minutes the heart had been quite still, and it seemed as if there had been a resurrection; but unfortunately the heart failed again after beating for 27 hours, and this time the man was beyond recall. But, even though the man ultimately died, it was a great surgical feat.

AIR RACE ROUND BRITAIN Winner Has Flown 230,000 Miles

The two-days' air race round Britain was won by Mr. F. L. Barnard, piloting a D.H. 4A aeroplane, driven by a 350 horse-power engine, and carrying two mechanics.



Mr. F. L. Barnard

His actual flying time over the 810 miles course was 6 hours 31 minutes 57 seconds, an average speed of about 124 miles an hour. From Manchester to Bristol he averaged 141 miles an hour.

Mr. Barnard's machine is a war-time bomber, which he has flown constantly for three years. The airman has a splendid flying record; he has flown across the Channel 469 times, and estimates that he has covered 230,000 miles.

FAMINE IN THE SEA Caused by the War on Land

In Austria, after the war, many children were to be seen absurdly small for their age owing to lack of food; but not only children suffered in war-time in that way.

Professor Garstang, as he informed the British Association the other day, found that in war-time the plaice caught in the North Sea were only about the size of pre-war plaice two years younger, the reason being that owing to interference with fishing the plaice grew too numerous for their food supply, and so had not enough to eat.

It would appear, therefore, that the fishermen are really doing a work of mercy when they catch fish, and that the fishing may be compared to the thinning of turnips in a turnip-field; it ensures more food and better growth for the survivors. It is odd, however, to discover that the Great War on land caused something like a famine in the sea.

HOLBORN NOT SO BAD AS PAINTED Misleading Figures of the Registrar-General

BOROUGH'S GOOD RECORD

The C.N. presents its compliments to the Borough Council and the Medical Officer of Holborn, who have sent us a courteous explanation of the tragical figures of the deaths of babies given in the Registrar-General's Quarterly Report from which we quoted the other day.

Dr. Hutt explains that the Registrar-General's quarterly figures are incomplete, so that they give an entirely misleading picture of the relation of deaths to births in Holborn.

As a matter of fact, Holborn is nothing like so black as the Registrar-General's Quarterly Report seems to paint it, and the C.N. much regrets that, in relying on these official figures, it has done an injustice to a council which is doing its best to save the lives of little children, and has, indeed, quite a good record behind it.

What happens in Holborn is rather curious. As the borough has no special hospitals for mothers it happens that many of its babies are born outside the borough, and these outside babies are not put among the Holborn births in the Registrar-General's quarterly figures, though the Registrar counts them in Holborn when he makes his annual report.

A Bad System

That seems to us a very bad system, and quite misleading, for, of course, it gives Holborn the deaths and not the births; that is to say, the children born outside are taken to Holborn, and if they die they are counted in Holborn, with the result that the proportion of deaths to births is made to appear much higher than it is.

We must, therefore, all remember to take no notice of the Registrar-General's quarterly figures in future, and it seems a pity to publish them as they are so misleading. When we take the annual reports for Holborn we find that for the last ten years the average deaths have been no greater than for all London.

The C.N. is delighted to find that, after all, Herod does not choose Holborn specially to do his work in, and that children have quite as good a chance of life there as in London generally. We wish the Registrar-General would put a note of explanation with his figures when they do not mean what they appear to be.

BUCKETFULS OF MONEY A £135,000 Palace

The C.N. has spoken before now very admiringly of Sir Percy Cox, the British High Commissioner in Mesopotamia, because of the great reputation he won there, and it is not a custom of ours to "go back on" men who have served their country well; but there certainly is something that needs explanation in the spending of £135,000 of public money, in these hard times, on a residence for him and his department in Baghdad.

Apparently nothing was known in England about the spending of this princely sum until the scheme that required the money was being carried out; and now there seems to be some doubt as to which Government Department will have to take the responsibility. But there is no doubt who will pay. The public will pay. It is the Select Committee on Public Accounts that has found out the facts which need an explanation. It is difficult to imagine what can be said for the spending of such a sum on a building in Baghdad, but we must give the spenders a fair hearing.

ARE WE MACHINES? The Mystery of the Bodies We Live In

THINGS WE DO NOT KNOW

In his presidential address, at the Hull meeting of the British Association, Professor Sherrington, the famous physiologist, discussed the bodies of living organisms in their aspects as machines.

The more we know of the universe the more we perceive the unity of all its laws. The spectroscope tells us that atoms of hydrogen in Jupiter have exactly the same vibrations as atoms of hydrogen on the Earth, and that chemical combinations in the Sun follow just the same laws as in a laboratory on the Earth.

In the body, too, all the chemical and physical processes take place in much the same way as in dead inorganic matter; the food we eat burns in our bodies in much the same way as it might burn in a grate, and we can imitate digestion in a test-tube. By the study of the dead we learn to understand the chemical and physical processes going on in living bodies, for with the laws of the universe "there is no variableness, neither shadow of turning."

The Unknown

But even yet, as Professor Sherrington frankly confessed, there are mysteries about life which we cannot solve, and the greatest mysteries of all, the mystery of birth and the mystery of mind, are still hard to understand. We do not understand how living creatures reproduce their kind, nor how chemical processes in the cells of a brain produce thoughts.

It seems as if living creatures have some power in them over and above the forces of chemistry and physics, and it is quite certain that thoughts are not chemical products, and cannot be produced in test-tubes. Professor Sherrington himself admitted that the "how" of the mind's connection with its bodily place is still utterly mysterious. In an interview he afterwards gave he declared that science only confirms the revelation of a kingdom of God upon Earth.

OLD AND YOUNG How to Keep Cheerful

Mr. W. B. Luke, the London magistrate, has been giving good advice to an old man brought before him. He advised the unhappy old man to seek the society of children so that he might absorb something of their brightness and joyousness and become young again.

It has often been noticed that teachers of the young, and those much in association with children, retain youth and hopefulness longer than most people, so the magistrate's advice was sound.

Age is sometimes afraid of youth, and youth is often afraid of age; but each has a great deal to give and to get from the other, and love between the old and young is often the best and most beautiful of all.

A DINNER 20 YEARS OLD How Long can Tinned Foods be Eaten?

The poisoning tragedy at Loch Maree has naturally raised the question how long preserved foods can be kept without deterioration.

At the enquiry with regard to that tragedy, Dr. Leighton, of the Scottish Board of Health, stated that he had eaten, without bad effects, tinned food issued to the army in the Boer war. A dinner from this food would be twenty years old!

But preserved food will keep much longer than that, for tins of food left by Captain Parry in the Arctic zone in 1824 were tested 86 years later, as C.N. readers know, and found to be sound and palatable.

Theoretically there is no reason why tinned food, if hermetically sealed, should not last for ever.

September 23, 1922

The Children's Newspaper

3

FRANCE HONOURING A MUSICIAN

Auber and His Work HOW HE HELPED TO CHEER UP LONDON

By Our Paris Correspondent

When we are passing the Opera in Paris the nearest street is the Rue Auber, named after the great musician whose jubilee France is preparing to celebrate. France, in fact, forgot him last year, for, Auber having died in 1871, his memory ought to have been celebrated in 1921. How fragile glory is! For few artists have had a more glorious life than Auber's, or have been more feasted and more happy.

Auber had a father who understood his remarkable vocation, but the boy was afflicted with a shyness equal to his gifts. He had no confidence in himself, and instead of preparing for an artistic career he thought it wiser to go in for business. The father agreed, knowing well that Auber's bent would be stronger than anything else, and would shortly lead him to music.

In the First Rank

So it happened. Auber travelled to England to work in the City of London, and there, in his free time, he organised concerts. This charming, fascinating man, already a very clever pianist, violinist, and harpist, was lionised by great ladies; he played for them, composed for them, and soon forgot to go to his business.

From England, Auber was invited to Belgium, and there, in a famous drawing-room, he soon rose to the first rank among European musicians who gathered there.

Back in Paris he found his kind father ruined by a revolution, and this made the son still more ambitious. But the great Cherubini, whose attention had been attracted by the young man's remarkable gifts, said to him one day: "My boy, you know nothing. Your talent has no basis; you must go to school and work," and our friend understood. He did work, and very soon he wrote his first musical play, which met with wonderful success.

End of a Peaceful Life

A great chance was given to Auber now. In 1823 he met Eugène Scribe, and together they composed plays for which the theatre was never large enough. King Louis Philippe soon loaded our musician with favours, and had his works played at the Opera.

The last stage of this happy life was when Auber directed the Conservatoire, the great musical school of Paris. There he peacefully ended his peaceful life. Gentle and kindly to those about him, always bright, everybody loved this man. But, although he was honoured and admired, Auber remained modest. "Music," he wrote, "is a fugitive art of which the forms have but a limited duration, destroyed by time."

Surely a judgment remarkably clear-sighted! The artist knew how changeable men are, and his modesty was wisdom itself.

SPREAD OF KNOWLEDGE World Institute for Agriculture

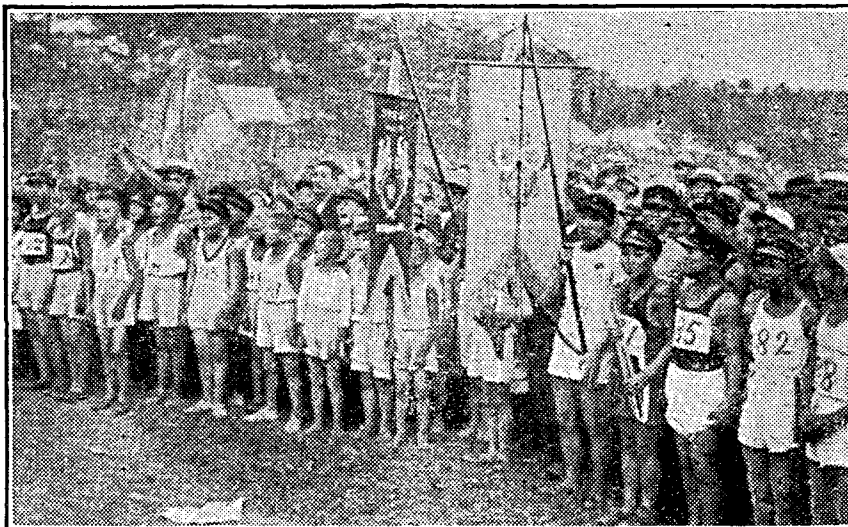
One of the most remarkable institutions in the world is the International Institute of Agriculture, which was set up in Rome before the war.

It collects from all the world, and distributes to the right persons in every country, information about every department of agriculture. It publishes crop reports and monthly reviews in English, French, Italian, and Spanish.

The institute circulates invaluable information about new methods, machinery, plant diseases, animals, poultry, and insects.

Here we have an example of what will some day be the common practice of mankind about all good things. Every branch of human activity will be served by a world-wide publicity organisation.

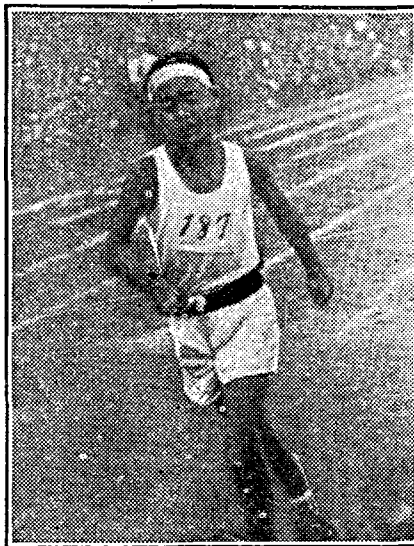
YOUNG AND OLD JAPAN AT PLAY



Schoolboys cheering the runners in a foot-race



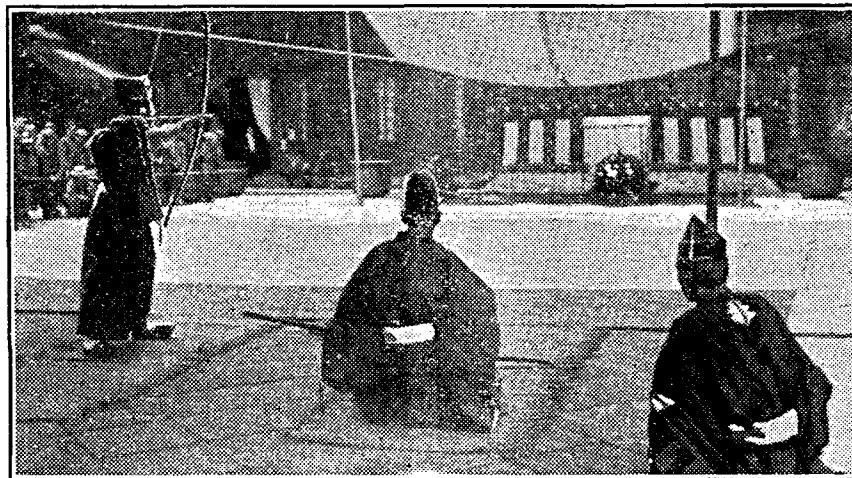
The high jump



A winner comes home



A foot-race about to start



The old-fashioned game of archery still practised in a Tokio college

Young Japan is as keen on athletics and outdoor games as the English boy and girl, as shown by these pictures taken at the recent athletic meeting of Tokio school children held in the Central Park. The bottom picture, by way of contrast, shows a survival of the games of old Japan

IS THE QUARREL JUST?

SHAKESPEARE'S FAMOUS LINE COMES UP

Tragic Event Brought About by a Blunder

STORY OF A LIGHTNING FLASH

There is an old saying, "I have had many troubles in my life, and most of them never happened." Which means that anticipation is worse than reality.

It may not matter where individuals are concerned, but when nations are affected blood flows and ruin results. One of the most astonishing cases comes from Italy, where that body of extremists the Fascisti have been carrying fire and sword into the Slovene villages which the war has brought under Italian rule.

Punishing the Innocent

Overlooking these villages stands Monte Nero, and upon it the victorious Italians erected a war memorial. Last June the memorial was mysteriously damaged; and the Fascisti, without inquiry, blamed the Slovenes. Ever since they have pitilessly harried them in the area of the supposed outrage, looting and destroying their homes.

Now a famous expert has investigated the problem, and finds that the damage is due to no human agency. A stroke of lightning was responsible, and death and destruction have been let loose upon the unoffending villagers for nothing.

"Thrice is he armed that hath his quarrel just," said Shakespeare. But how often is the quarrel just? The terrible Indian Mutiny was caused by the false report that the British were causing native soldiers to use bullets greased with the fat of cows, sacred to Hindus, and the fat of pigs, condemned for all Mohammedans as unclean.

Jenkins's Ear

Less than two centuries ago we went to war with Spain on a plea quite as false, "Jenkins's ear" being the popular cry. Robert Jenkins was the master of a little ship who came home declaring that one of his ears had been cut off at sea by a Spanish captain. The incident was revived seven years later as a primary excuse for the war with Spain which then began.

History has two versions as to Mr. Jenkins's ears. One is that, if he lost an ear at all, it was here in London, in the stocks, as an offender against the law. The other is that he went to his grave in possession of both his ears.

But where in the world is there an older or more tragic blunder than that connected with the dreadful practice of suttee in India? Suttee is the English of a word meaning "virtuous wife," but in practice it came to mean that a woman, on the death of her husband, must die on the funeral pyre which consumed his remains. It was said to be according to the holy books.

A Terrible Custom

The hideous custom is age-old, and nothing has caused more trouble than its suppression in India. Indeed, it was not until 1920 that it was finally abolished in Nepal. Yet the mournful truth is that all the precious lives of aged widows, of youthful brides, and happy mothers of children have been sacrificed as the outcome of a terrible blunder. There is not one word in the holy books of India supporting suttee. It is all a frightful error, arising from misquotation and mistranslation.

Science and knowledge can rid the world of half its horrors if we will but let them, but common sense and cool heads alone can save repetitions of this incident in Slovene Italy. There is still in the world too much of the spirit of the man who thrashed a second man for saying that his sister was ugly. "But," said a friend to the victor, "you haven't a sister, have you?" "Of course not," was the answer, "but principle was the thing I fought for."

THE AIR TERROR WHY WE MUST ALL FIGHT IT

War Men Thinking Out War on Women and Children

MORE BOMBERS

By a Special Correspondent

Just a few years ago, on July 25, 1909, the Frenchman Blériot flew the English Channel for the first time in a heavier-than-air machine.

That date was only five years before the beginning of the World War. Now it is announced that the British Government has ordered six 3000-mile bombing planes. The news comes like a bomb to all. It was a feat which was made possible by the perfecting of light internal combustion engines of great power by Gottlieb Daimler and other inventors, in connection with the motor-car.

Developing an Industry

Never was an industry so quickly developed as the making of aeroplanes. In 1911 twelve French airmen flew the Channel, and returned to France on the same day without any mishap. At the beginning of the Great War Great Britain possessed six squadrons of not very efficient flying machines, and so great was the impetus given to the subject by the war that at the end we possessed 200 squadrons, containing 22,000 exceedingly efficient aeroplanes.

Almost as many flying machines were possessed by both France and Germany.

Peace has fortunately brought about a reduction of military aeroplanes, and we now have under 400, and in addition about a hundred machines used for purely peace purposes. France, however, has 2520 military aeroplanes in addition to 600 civilian machines. Germany is not now allowed to possess military aeroplanes, but she has over 200 peace machines, and is making wonderful experiments in engineless gliders.

Two Hundred Miles an Hour

Aeroplanes now exist capable of travelling at 200 miles an hour, which means that a fleet of flying machines could be launched by one country upon another and begin an attack within a few hours.

What such attacks meant even in the war, when flying machines were so much in their infancy, is shown by the fact that as many as 1314 persons were killed and 3407 wounded in England by the German raiders. On a single day, in June, 1917, German airmen killed 162 people in London, Kent, and Essex.

Two things we may note in particular about our air experiences in the war:

1. Attacks were weak and experimental, yet could only be resisted at enormous expense.
2. The greater number of people killed were not soldiers or sailors, but peaceful men, women, and children, who had no power to defend themselves.

War on Non-Combatants

The second of these points is all-important. War, as the world has hitherto known it, has been waged by fighting men upon fighting men. Even in ancient times barbarians hesitated to war upon the defenceless. Attila the Hun did not always destroy the cities he conquered; but an attack by aeroplane is necessarily an attack upon non-combatants. When the airman drops his bombs upon the enemy country he necessarily destroys women and children, the old and the young.

It will not do to regard aeroplane warfare as consisting of mighty duels between gallant air fighters. That is the smallest part of the matter. The main objective of the aeroplane is to destroy the works of the enemy, and in doing so the airman is bound to kill wholesale, in the most horrible way yet devised.

That is what the Terror of the Air comes to, and that is why we must all fight against a sort of warfare that is murder most foul.

CONTROL IN THE ANIMAL WORLD THE ELEPHANT THAT WENT ON STRIKE

Curious Experience in the
Zoological Gardens

THE SOUND OF WORDS

By Our Natural Historian

The fact that a native elephant-trainer from India has come from the East to the West and conquered the fine elephant which has been on strike at the Zoo has aroused much curiosity concerning the secret of the dark man's strange influence.

Casual onlookers believe that this great beast has been wooed back to its task of carrying children about the Zoo by the mere words in which the mysterious man addressed his pupil; but the fact that certain words are used, and that animals obey them, does not prove that animals comprehend their meaning.

An observant naturalist at the Zoo was careful to make note of the way in which the great cats there once behaved in the presence of brightly-clad warriors from the tropics. Not a word was spoken, not a signal made, but the lions, tigers, and leopards, which were quiet and friendly in the presence of a normal crowd, became wildly restless and alarmed at the sight of such men as they had been accustomed to see in their native haunts when they turned from hunting deer to flee from creatures who hunted them. They remembered their past, and were afraid.

The Habit of Obedience

It is purely association of ideas that causes animals to obey a spoken word of command. The Indian at the Zoo revived in the elephant's memory—one of the most wonderful memories in Nature—the old habits of obedience to which it was trained when broken to service in its native land. His costume, his appearance, his voice, the grouping of the sounds he uttered, helped to recall the animal to its habit of docility.

The same process is productive of a horse's response to orders. When a man is training a horse, as when he is working it, he always uses the same form of words, even the same tones, to mean a certain thing. As he uses the words, he reinforces the verbal command by action with the reins, if necessary, and in the last resort uses his whip. It is the sound, not the words, that the horse knows.

A LOST MATE FOUND True Story of a Lucky Bird

A reader from a village near Paris sends this note of a recent incident.

The other day a little girl friend of mine went to a fête in the village. At a "lucky number" stall she won a little African bird in a cage. A lucky purchase it was for the bird.

She returned home delighted, and went to bed feeling quite contented.

The next morning, while she was feeding her new pet, she was surprised to hear her mother calling, saying that her bird was hopping about the kitchen floor picking up crumbs.

She could not make it out, for her own bird was there in its cage before her eyes; so she ran into the kitchen, and there, on the floor, was a bird like her own!

She quickly closed the window and ran to fetch her own bird. Opening the door of the cage, she set it down on the floor, and immediately the second bird flew in, overjoyed to find its lost mate!

Evidently they had been caught together, and separated on arriving at the fête. One had been fortunate enough to escape, and in its wanderings had probably heard its mate call, and had gone into the house in search of it.

It is to be hoped they will not be separated again.

MONEY WORTH NOTHING MILLIONS OF MILLIONS OF ROUBLES

Government that Will Not
Accept Its Own Notes

CABBAGES FOR TAXES

Russian delegates have been trying to explain the financial plight of their country to the Debts Sub-Commission at the Hague Conference, and for the first time the world is presented with a reliable glimpse of the chaos to which the Bolsheviks have brought the financial fabric of this once great country.

To appreciate what has happened it must be remembered that the standard of value in Russia used to be the gold rouble of 100 kopecks, worth just over 2s., and just over 12 paper roubles went to the pound. After the revolution in 1917, and the Soviet Government's issues of paper money, the system of reckoning went all to pieces, so that, in October, 1921, the exchange value of £1 was 231,000 paper roubles, normally equal to £18,520.

Gold and Paper Money

From the information furnished by the Russian delegates it appears that the authorities now fix the rate of the gold rouble in paper roubles every three months. A new rouble, called the 1922 rouble, has been established, equal to 10,000 former Soviet roubles, but, even so, this 1922 rouble is equal to less than a farthing, for the rates of exchange, as established by the State bank last June, were 1080 of these 1922 roubles to £1, 230 to an American dollar, and 20 to a French franc.

The issue of paper money in Russia has grown in an alarming manner. These are the figures in roubles supplied at the Hague Conference by the Russian Commission:

1917	5000 millions	1920	943,000 millions
1918	33,000 millions	1921	16 million millions
1919	164,000 millions	1922	253 mil. millions

The 1922 figures are only to June

On July 1 this year the paper in circulation was 271 million million roubles.

To estimate the gold coin in circulation is impossible, but it is certain that a considerable quantity of Russian gold has left the country. The rest is generally hoarded.

Chaos on the Continent

Now, when a country issues paper money, that paper is of no more value than any other piece of printed paper unless there is in the national bank gold as security for the value of the notes.

The trouble with Russia, and also with Germany and Austria, is that the governments have printed as money millions of pieces of paper which cannot be exchanged for gold, so that while the people in the country have to use this paper as money business men in other countries will not take it, or bills of exchange, but only gold; hence most of the gold has gone out of Russia.

One item of estimated revenue in the Russian Budget for 1922 is a rural tax which is expected to produce over 319 million gold roubles in nine months, but is the Government going to accept paper roubles to the value of the gold roubles as fixed by itself? Oh dear, no! This tax is collected in kind in the form of agricultural produce, corn, fodder, cabbages, and so on.

CAT BY THE SEA A Morning Bathe

An eight-year-old reader sends an account of an exceptional cat that took to sea-bathing.

Neko was very fond of my father, and was taken to the seaside when father and mother took a small house there.

When they went bathing in the morning Neko went with them, and, seeing my father swimming, she got very excited, and ran up and down the beach.

On the second morning she dashed into the water and swam out to meet him; and every day after she went in, becoming at last an expert swimmer.

WHAT WILL THE WEATHER BE? SIGNS THAT HELP US TO KNOW

How the Clerk of the Weather
Makes His Forecast

AID FROM WIRELESS

By Our Weather Correspondent

To foresee the weather of the future is one of the oldest arts in the world, but the great majority of people have never made much advance on the crude methods country folk have believed in for ages. They still rely upon the swallows flying low, the halo round the moon, and the tenderness of their corns.

Some of these signs admit of simple explanation; some are dependable, but have not been scientifically explained. Such methods of foretelling the weather are not, however, in any sense scientific. They are what are called empirical methods, because they are founded upon observation unsupported by reason.

The Meteorological Office, which is the Government department responsible for making weather forecasts, maintains a number of observatories in different parts of the country. At stated times every day each observatory sends by telegram a statement of the weather it is experiencing, the temperature, wind direction and force, and the reading of the barometer at the time.

Making a Pressure Map

All the barometer readings are written down on maps, each on the spot where the observatory at which it was taken is marked. Lines are then drawn joining together the places at which the pressure is found to be the same. These lines are called isobars, which means "lines of equal pressure." They are always found to fall into recognisable patterns, or groupings, indicating various types of distribution of air-pressure.

Now, each type of the pressure distribution has certain fairly definite kinds of weather associated with it, varying according to circumstances. The secret of weather forecasting lies in the fact that, though it is not possible to tell from the weather of one day what will be the weather of the next, it is possible to tell from the pressure-map of one day approximately what the pressure-map of the next day will be like.

How the Ships Help

From this the weather prophet is able to infer what sort of weather will occur tomorrow. The temperature, wind, and weather which are likely to be associated with tomorrow's pressure-map can nearly always be accurately foretold.

All the forecasts which appear day by day in the newspapers in all parts of the world are made in this way. It requires a great deal of skill, and it is not mere guess-work.

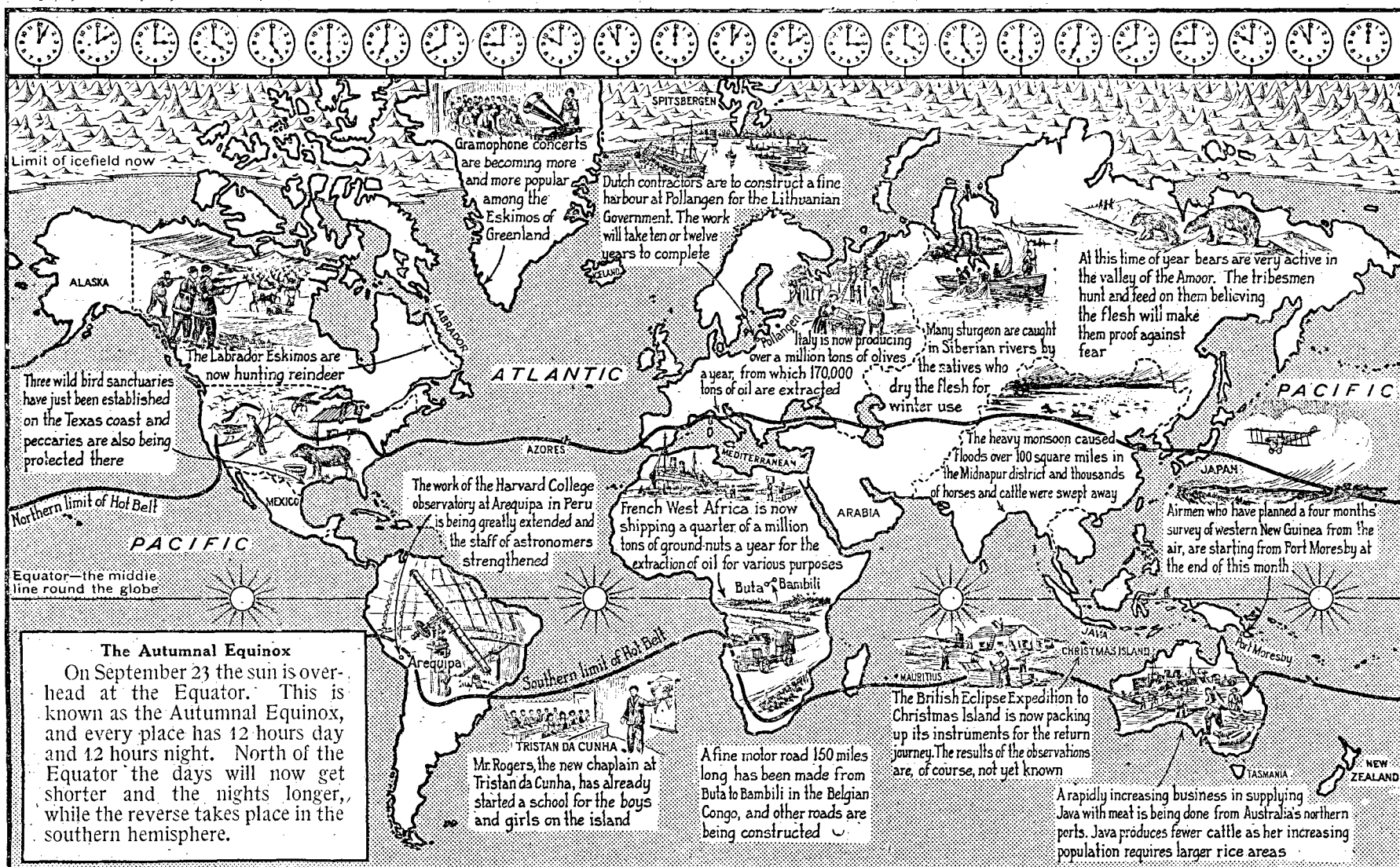
Great improvements have lately been made by the introduction of wireless telegraphy for the purpose of weather forecasting. This enables messages and barometer readings to be obtained from ships at sea. Wireless is also used to send out the forecasts to those who require them. By this means farmers and others can receive notice of any probable change in the weather with the least possible delay.

Improving on Official Forecasts

Weather forecasts made by a central department for the whole of the United Kingdom can only be of a very general nature. It would certainly be a great improvement if branch offices could be established to make local forecasts for particular districts. Such local forecasts could interpret the pressure-maps in the light of the peculiar conditions of each district, such as the positions of hills and valleys.

Anyone who takes the trouble to understand the pressure-maps, which are published every day, and to study how the conditions apply in his particular district, can soon learn to improve on the official forecasts.

PICTURE-NEWS AND TIME MAP SHOWING EVENTS ALL OVER THE WORLD



THE NEW BOY MUSICIAN

Setting Shakespeare to Music

One of the most prominent men in the world of British music is Sir Thomas Beecham. He believes in this country providing its own music, even opera, and some time ago advertised for an English opera.

At that very time his son Adrian, unknown, it is said, to his father, was composing works of the kind his father was advertising for ; and now, at the age of 17, he has turned Shakespeare's Merchant of Venice into an opera of which critics are speaking very cordially.

Adrian Beecham began composing music for the stage, with full orchestral score, when he was ten. At 15 he had written music for two of Shakespeare's plays—*Twelfth Night* and *The Merchant of Venice*—the last one taking him five months, writing three hours a day. Now it is his ambition to set all Shakespeare's plays to music.

Musical compositions of high merit have not been unusual with great musicians, like Mozart and Mendelssohn, when they were quite young, and every lover of music will hope that Adrian Beecham may join the ranks of composers who have won well-deserved fame.

TURNING OUT A QUEEN

An interesting incident bearing on the strength of insects comes from a reader living in Scotland.

In the garden of a house at which she was staying were two hives of bees, one of which appeared to be without a queen. The owner pinned a queen cell firmly to the comb in that hive.

The following day he noticed that the queen cell had hatched, but that the bees had turned the young queen out of the hive, thus intimating that there was already a queen in residence.

The indignation of the bees must have been great, for a little later one was observed crawling out of the hive carrying the offending pin!

THE DIATOM

Sea-Specks of Life and What They Do

At the Hull meeting of the British Association, Professor Drummond discussed the ever-interesting subject of vitamins, those mysterious substances in food which seem so necessary for growth and health; and he suggested that farmers should give small quantities of cod-liver oil, which is enormously rich in vitamin A, to animals not thriving.

It is very strange that these substances should be essential to life, and it teaches us to realise the unity of life when we discover that the oil in the liver of a cod-fish may prevent a child from growing up with knotty and crooked bones ; and when we discover, too, that the cod-fish gets the vitamin in its liver-oil from the little sea-plants called diatoms, which float about in the sea in little glassy shells.

LIFE ON THE HEIGHTS

Cows that Do Not give Milk

Mr. J. Barcroft, F.R.S., to whose study of the effects of rarefied air at great heights in the Andes we referred the other day, told some interesting facts in his paper to the British Association.

He found that the inhabitants of the high Andes at a height of 14,200 feet were very short, but had unusually large chests, which was plainly an effort of Nature to enable them to breathe more deeply to compensate for the deficiency of oxygen in the rare air. He found, too, that up to 12,000 feet there were cows that gave milk; but above 13,000 feet they gave none, and at 14,000 feet they gradually died from lack of oxygen. Dogs, sheep, ponies, and lice, however, lived even at 14,000 feet.

Pronunciations in This Paper

Corneille	Kor-nay
Magellan	Ma-jel-lan
Núñez	Noon-yayth
Pasadena	Pasa-dee-na
Petiole	Pet-e-ole

DAGONET PASSES ON

George R. Sims, the Recitation Man

There must be many of our readers who have appeared as reciters, and who know how well the sentiment that abounded in the ballads written by Mr. G. R. Sims appealed to the sympathies of the average concert-goer. All of them will be saddened by the thought that we shall have no more ballads printed above the pen-name of Dagonet.

Mr. Sims had lived from times when Dickens was softening the hearts of his countrymen with Little Nell, Poor Joe, and other pathetic children, and he kept the Dickens fashion alive into these modern days.

He was a cheerful, frank Londoner, who wore his heart on his sleeve, and had no liking for reserve or reticence. He liked to cry as naturally as he laughed, and so do quite a number of his countrymen. To them, as to children who enjoyed reciting his verses so full of feeling, his death will be as that of a warm-hearted friend.

NEW WEAPON IN THE FLY WAR

A Great Improvement

The latest device for catching flies is a great advance on the sticky band, so unsightly and so cruel, for even flies deserve a quick death.

The new invention is worked by electricity, and is quite ornamental. It is composed of a piece of wood with four grooved sides, round which is wound a wire for conducting the current. This wire is coated with a preparation that attracts flies, and immediately an insect settles on the wire it receives an electric shock. Its body falls out of sight into a round brass bowl, which can be removed for emptying.

THE FLIGHT FROM THE TURK What Next?

PITIFUL TRAMP OF A HUNDRED BLIND CHILDREN

"Pray that your flight be not in winter," is the stern Biblical warning of the terrors of civilian retreat before a cruel foe.

Only winter has been wanting to complete the horror of the stampede of Christian populations before the recent victorious advance of the Turks in Asia Minor.

All races alike that are Christian have taken part in the rush toward hoped-for safety—Greeks, Armenians and Syrians. We read of a hundred blind Armenian children, orphans all, supported by the world's charity, tramping five hundred miles across rugged mountains and parched, waterless deserts to escape the dreaded slaughter.

And what of Christianity, in all its forms, outside the area of Turkish politics? Is it utterly powerless to stay the avenging sword that spares neither age nor sex when the cruel Turk sees red?

The ordinary man of every land is tired of the political ambitions of Turks and Greeks. He is quite content to let such ambitions find their level at the expense of whoever cares to fight it out. But massacre, and all the horrors that go before it and come after it, are different matters. Neither Christianity nor the morality of governments that claim to be decent can stand by and see these things unremoved without losing their own souls.

Governments, whether of kings and sultans or of cliques and parliaments, may abdicate and change, but for Humanity there should be no abdication.

CHILDREN'S NEWSPAPER

SEPTEMBER 23 1922

The Only Wealth Worth While

ALL Europe is talking about Wealth. Can Germany pay? How is France to get wealth enough to build up her devastated areas? When is the wealth of our trade to come back?

What is the truth about wealth? Ought we to seek it or to shun it?

In the strictly material sense wealth is that which has value in exchange—value in the market where things are bought and sold. If we have a saleable house, or ship, or share in a business, we have this sort of wealth.

That fine thinker John Ruskin, however, reminded us that the word Wealth is derived from the good old Anglo-Saxon word *Wela*, which means well-being. He taught us to recognise that wealth must not merely be regarded as great possessions, but as that which "avails towards life."

The distinction is very important. Things good, bad, and indifferent may have value in the market. We can change our money into good and true things, or into bad and false things. We can set our hearts on obtaining good things or bad, and in the process may either strengthen or weaken or even destroy our lives.

It was because this important distinction was not realised a hundred years ago that so much misery was created in ignorance. For example, when it was discovered how to spin and weave cotton by machinery, a new trade sprang up in Lancashire and thousands of men, women, and children were rapidly brought together, crowding into unhealthy dwellings to be near the factories. The result was that great possessions began to arise, but the well-being of the people miserably failed.

A hundred years later one of our great generals, speaking of soldiers drawn from Lancashire, praised their courage, but asked whose fault it was that they had no proper physical development. The fault was that those who made our modern industries forgot that wealth is a hideous mistake if it does not make good lives.

It is good that we need have no fear that commercial wealth need be hostile to happy lives. Once we understand that the cherishing of life is the main object of making wealth, we see that our wealth-making energies can be directed to build up a nation full of happy people.

It is all a question of giving our attention to the right things—the creation of beautiful cities, a fruitful countryside, good schools, and beautiful and healthy homes. We have not only to secure good wages, but to make it possible for wages to get a good return. We have to make it impossible for human lives to be wasted in the by-ways of our civilisation.



THE EDITOR'S TABLE

Fleetway House, Farringdon Street, London

above the hidden waters of the ancient River Fleet, the cradle of the Journalism of the world



Fame

SOME places make themselves famous; some are famous by accident; some have fame thrust upon them. Such a place is Stilton.

Early in the last century there was an inn at Stilton kept by an admirable woman from the Vale of Belvoir. The coaches rattling along the Great North Road stopped at Stilton for dinner, and the landlady of this inn saw that the hungry travellers had the best of everything.

She used to get from Langar a particular cheese that was made there, and so popular did this cheese become with the hungry passengers that they would talk for weeks of "that excellent cheese you get at Stilton." Finally it came to speaking of "the Stilton cheese," and to this day the name sticks to the cheese of Langar.

Thus did a little town earn a name now famous by means of a cheese which it never made.

Savages

WHAT is a savage? In an official report on Togoland the character of a savage people is described.

The natives are said to be "unstable of purpose, dominated by impulse, unable to realise the future and restrain present desire, callously indifferent to suffering in others, profuse in protestations of affection and good intentions which are afterwards belied woefully by their actions."

"So intense is the disinclination to work," we are told, that "even the strongest willed can rarely combat it."

But if these are the qualities which mark the savage, must we not admit that a very large number of people in England, and all over Europe, are still in a savage state?

Many of them lack even the one saving grace which is conceded to the Togos by the official report, for the Togos show "a most marked desire for improved education," and that can hardly be said to be general among us!

Let Us be Thankful

IN an old Victorian volume we have come across a quaint paragraph which, after making us laugh, set us thinking how grateful we ought to be for modern inventions. This paragraph is headed, "To Make The Best Black Ink," and proceeds as follows:

To six quarts of rain-water put one pound and a half of fresh blue galls of Aleppo, bruised small; eight ounces of copperas, clean; rocky, and green; eight ounces of gum-arabic; and two ounces of roche alum.

Let these stand together in a large stone bottle, shake it well once every day, and you will have fine ink in about a month's time.

The thought of our grandmothers shaking that large stone bottle every day for a month makes us grateful for our penny bottles of ink; but let us not be too conceited. Do we know anything about fresh blue galls of Aleppo and copperas, clean, rocky, and green?

The Mistake of Australia

IT seems that Australia was discovered by mistake.

Well, it would have been a greater mistake not to have discovered it, said a humorist on hearing this. But even a serious word may be added to this excellent wit, for it would be the greatest mistake of all, surely, if, having discovered Australia, we were not to people it.

Tip-Cat

THE walls of No. 10, Downing Street, are bulging. Has somebody inside grown too big for the house?

A CORRESPONDENT asks why travellers in Egypt always write about Old Nile. Simply because it is no juvenile.

SEASIDE resorts are so crowded there are complaints that visitors cannot find lodgings. If they could they would probably complain that they were taken in.



Well, since the twelfth of August there have been a lot of grouzers.

THE German Chancellor declares that Germany has served the democracies of the world. Yes, but how?

THE premier has written the first chapter of his new book with his own hand. But why not use a pen?

When to Speak

THAT is a good rule of which something reminded us this week: "Never speak till you have something to say, and even then it may be better not to say it."

There are many things we need never say, but nothing we can unsay once it is said.

The Last Prayer of George R. Sims

There is something touching in these lines by George R. Sims, written in the Referee a few weeks before he died.

Before the final curtain falls,
And I must quit the stage of life;
O, fate, be kind and heal the strife

That war's deep wound inflames
and galls.

Lo! at the wings I'm waiting
dressed

To play the scene and give the cue
That bids the baize hide all from view.

O, let the Last Act be the best.

Youth to the Rescue

By Harold Begbie

MAKE speed to take our places,
Brave children of mankind,
Lift up your sunlit faces,
Restore to earth fresh graces.
Of heart and soul and mind;
For we are old and falter,
Our vision waxes dim,
Our lips have now no psalter,
Our heart has lost her altar,
Our soul forgets his hymn,
We tremble, doubt, and palter;
Make speed to save mankind.

BRING back the glad elation
Of dawns that burn with joy,
The hope that is laudation,
The faith that all Creation
Is singing like a boy;
For courage, trust, and gladness
Must fill man's toiling breath
To save the Earth from madness,
To end despairing sadness,
And pluck the world from death:
Make speed with hope and gladness;
Make speed to save mankind.

The Watch Dog

By Our Country Girl

ONCE upon a time in the eighteenth century three important persons lived at 13, Lincoln's Inn Fields. The first was a scholar, a collector, and a famous architect, Sir John Soane, who designed the Bank and other stately London buildings which will outlast our great grandchildren; the second person must be counted as important as the first, for is not a wife a man's better half? The third was a little dog. You know what an important member of the household a little dog can be, the right kind of little dog, which lies by his master's desk and looks up from time to time with dark, adoring eyes and gently thumping tail.

Their portraits hang at number thirteen yet, and there we may see them—from March to August on Tuesdays, Wednesdays, Thursdays, and Fridays, together with the pictures, manuscripts, and carvings that Sir John Soane left to us.

Those must have been fine times at Number Thirteen when the road was full of coaches, and the staircase bright with candles, and the big rooms were thronged with the great people of the day. What distinguished hands caressed the little black-and-tan dog!

But at last all the coaches drove away, and the torches were put out, and presently Sir John and Lady Soane followed their guests. The pleasant, hospitable house became a museum. Instead of satin-skirted ladies and cravated gentlemen, there are only attendants and students in modern garb; instead of the welcoming smiles of a host we are confronted by glass cases. All is changed. But no! The little dog is still on guard.

Guest and servant, master and mistress, may desert the home, but not he. He is buried here. And we may be sure that if the little dog had any choice he would rather lie here than mingle his humble bones with the dust of kings.

AMERICA'S OPPORTUNITY WILL SHE USE IT?

Millstone Round the Necks of
the Nations

U.S.A. AND EUROPE'S DEBTS

By a Special Correspondent

The United States hesitated long before deciding to intervene in the war. The war began on August 4, 1914, and America declared war in April, 1917.

In those first thirty-two months of the war millions of men had been killed or wounded on the European battlefields, and thousands of millions of pounds had been spent. A peculiarly heavy burden fell upon Britain, for it was our ships which mainly conveyed the soldiers, the food, and the war materials of the Allies, and it was our money which enabled France, Belgium, Italy, Russia, and other nations to maintain themselves in arms.

America's Help

From first to last we lent nearly 2000 million pounds to our fighting friends, and that money is still owing to us. In this process we risked the loss of our trade and of our shipping, and this was an enormous and deadly risk, because no other country in the world depends as much as we do on external trade.

During the first thirty-two months of the war American citizens made great gains by supplying materials to the fighters, so that by the time America came into the war she had already profited enormously by its existence.

The intervention of America found her with no army to speak of, and very few ships to carry soldiers to Europe even if she had had them. She set to work diligently to raise soldiers and to train them, but soldiers cannot be made in a day. Consequently, American troops, although performing valuable services at the end of the war, did not arrive in time to do very much fighting.

The Facts of the Case

It is not surprising in these circumstances that, while France lost 1,400,000 men, the British Empire 989,000, Italy 500,000, and even little Belgium 100,000, the United States lost only 50,000 men in the war.

In one way, however, America was able to give great help. When she entered the war she liberally supplied food and munitions to the Allies, and wrote the value of these things down as debts due to her by the Allies. That is why it is that the European Allies now owe America 2000 million pounds. Included in this sum is about 800 million pounds owing by ourselves, though we should never have made this debt had we not lent even more to our Allies.

It is necessary thus to review the broad facts of the case to understand the great and glorious opportunity which America now has of intervening once more—not in a woeful war this time, but in a woeful peace.

A Great Mercantile Marine

The War Debts hang like millstones round the necks of the nations. America had the good fortune, with a population of 106,000,000, to lose fewer lives in the war than Belgium, with her population of 8,000,000. She also profited enormously by the war expenditure, and gained the second Mercantile Marine in the world, whereas before the war she had few ocean ships. Before 1914 she was greatly in debt to us; now we are greatly in debt to her.

Europe is convulsed with financial troubles, and Europe is no small part of the world. The prosperity or adversity of Europe must affect America herself, and there are not a few American public men who feel strongly that America ought to play a great part in making a European settlement. It is a fitting thing for America to do, for her means have been enormously increased by the war which brought so much ruin to Europe. What will she do with this great opportunity?

A GALLANT LITTLE FELLOW

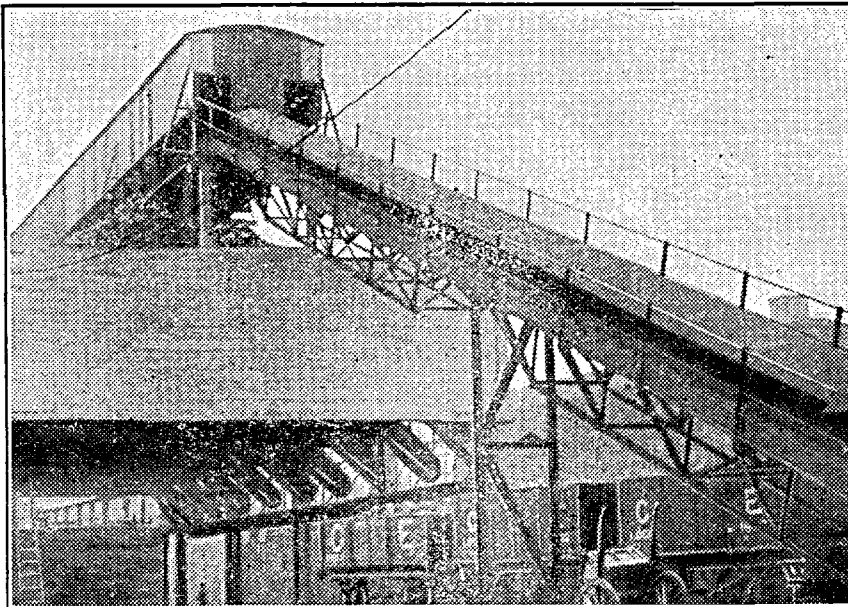
A RATHER terrible and dramatic thing has happened not very far from the Crystal Palace.

A little boy named Frederick Grant, aged 9, was knocked down by a motor-car in Upper Norwood, and his leg was caught in the machinery in such a way that it was impossible to free it. It was decided by surgeons on the spot that the leg must be amputated to save the boy's life; so an anaesthetic was given and the amputation was performed in the

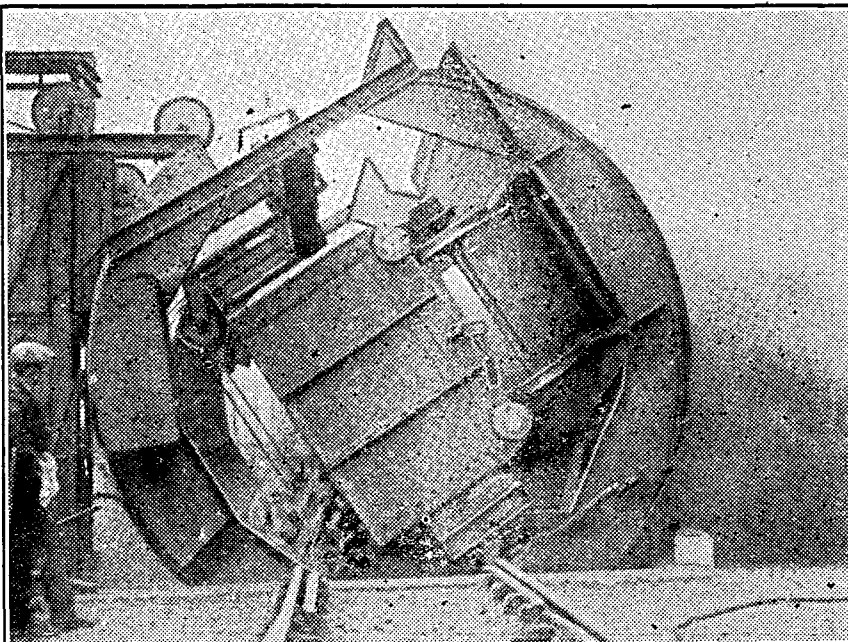
street. The operation took three-quarters of an hour, and, when he was freed, the boy had been lying under the motor-car for an hour and a half.

During this fearful ordeal he showed great pluck and courage, and when his father arrived from a football match, he called out to him: "I am all right, daddy." We are glad to say the boy was progressing favourably when we last heard of him. Our greetings to a gallant little fellow.

COAL WAGON LOOPS THE LOOP



Where the coal wagon goes upstairs



The wagon is turned upside down to release its coal

A new way of filling locomotive bunkers with coal is being carried out at Stratford on the Great Eastern Railway. The loaded wagons are taken up an incline like a staircase, placed in a tipper, and turned upside down. The coal is shot into a bin, from which it is carried by a conveyor belt to the engines.

NEWS FROM EVERYWHERE

A dog that was bitten by an adder at Bisley Camp, in Surrey, died within half an hour.

Hooking Up the Air Mails

Experiments are now being made the result of which, it is expected, will be that air mails will be caught up on hooks by aeroplanes while travelling.

Highest Jump on Record

At a Scandinavian athletic meeting at Copenhagen, Charles Hoff, a Norwegian, made a world's record by clearing 13 feet 6½ inches in the pole jump.

Rare Shakespeare for the Nation

A copy of the first folio edition of Shakespeare, published in 1623 and now worth a fortune, has, by the generosity of an anonymous donor, been acquired by the British Museum.

Holiday-makers at Deal recently saw five waterspouts burst out at sea, one after the other, within an hour.

A Big Eel

An eel three feet ten inches long, and seven inches round, was caught in a pond on Hampstead Heath, London. It weighed nearly three pounds.

Whistling for 3000 Miles

The Cunard liner Andania on its journey from Montreal to Plymouth experienced fog all the way, and had to whistle continuously for 3000 miles.

Wading to School

Over three inches of rain fell at Blackpool in a very short time not long ago, and streets and houses were flooded. Children had to wade to school up to their knees in water.

IMMORTAL MUTINEER

THE FIRST MAN ROUND THE WORLD

Spain Keeps a Four-Hundredth
Anniversary

A CHAPTER OF UNPARALLELED MARVELS

It is just four hundred years since a little rolling ship, with 31 men on board, steered unsteadily into the port of San Lucar de Barrameda, dropped anchor, fired salvoes of tiny artillery, and set the joy-bells of all Spain ringing.

The tottery little ship was the Santa Victoria: her captain was Sebastian del Cano, and she and he were the first ever to sail round the world. The crowning achievement of navigation, accomplished 30 years after Columbus first crossed the Atlantic and 55 years before Drake set out for his world-voyage, has been celebrated in Spain these last few days with a pomp and majesty worthy of the 400th anniversary.

The Mariner's Thanksgiving

The man who performed the actual feat celebrated differently. On the day that followed their return to port he and his crew landed, and, bare-headed and bare-footed, carrying tapers in their hands, they marched in humble procession through the streets to church, there to return thanks to God for safely bringing them out of perils such as no man had ever before successfully confronted.

But the great inspirer of the voyage, noble Magellan, he of the fiery imagination and heroic heart, was not there to share the triumph. He lay dead in the Philippines, where he had perished in the endeavour to implant in heathen breasts a love of God driven home at the point of the sword.

Sebastian del Cano was one of his lieutenants, and completed the voyage as captain of the Santa Victoria, a man secure in an immortality of fame. Yet—was ever a greater irony?—this man whom we now all honour was a mutineer! He mutinied against his chief, Magellan.

A Mutiny Fails

When Magellan was setting forth upon his voyage as the representative of Spain, his own sovereign, King Emanuel of Portugal, vainly sent assassins to murder him; and now at sea, with the way through America found and the great Pacific seen and sailed, half the crews rose in rebellion, with del Cano as one of their leaders. Had the rising succeeded the ships would have returned the way they came, and history would be differently written, without the names of Magellan and del Cano.

The mutiny failed under Magellan's iron will. They did cross the Pacific; they did eat the leather from the masts, as Magellan said they should. He died; del Cano sailed home in glory. But the sea was calling for his bones, and he paid his due.

The man who had first sailed round the world perished in a later and inconsiderable expedition, and we fancy the noble-hearted Magellan will forgive him at the last Great Assize, as we all do now.

A Cackleboat's Triumph

For, in spite of his attempted treachery, it was a wonderful feat that he accomplished. The one ship of the five that came back, the tottery, leaky Santa Victoria, was worth only £150 when she sailed, a mere cackleboat of a craft, with the strangest equipment.

Each ship had one cow, and ample provision was made for the souls of men in the way of religious observances. But their bodies do not seem to have counted much, for there was only one doctor for all the fleet, and all the medicines were in one vessel. The barrels, jars, and other vessels for foods and drinks cost more than the ship that did the voyage, and the wine itself nearly twice as much as the Santa Victoria.

THROWING AWAY £30,000,000 A YEAR WASTE OF A VALUABLE FERTILISER

English City Teaches the
World a Great Lesson

WEALTH DROPPED INTO THE SEA

American scientific journals are very proud of the fact that the cities of Houston, in Texas, and Pasadena, in California, have installed large sewage systems that enable the sewage to be divided up into various constituents of great value and sold for a large sum.

It must be remembered, however, that the English were the pioneers in this important work, two men being specially enterprising and energetic in turning the waste into wealth.

Mr. Joseph Garfield, the sewage engineer of the Bradford Corporation, some years ago devised a scheme for recovering grease from the sewage and changing the remaining sludge into a valuable dry fertiliser for the land. Bradford sewage contains a large amount of grease, which comes from the waste of the woollen factories running down the drains; and Mr. Garfield's system of dealing with this, though specially suited to a city like Bradford, was less suitable for other places with less grease.

Making Sewage Valuable

Dr. Grossmann, however, a distinguished chemical engineer, devised for Oldham a process for recovering wealth from sewage said by experts to be the most logical method of exploiting sewage yet attempted.

The difficulty of disposing of sludge for fertilising purposes is due to the large amount of water contained in it, which makes carriage to the farms extremely costly and difficult. Many attempts have been made to overcome this difficulty and dry the sludge, but the results were unsatisfactory.

The proportion of grease in the sewage, coming from soapsuds and greasy washing-up water, made farmers hostile to it, as grease seriously clogs the land.

An Enterprising Town

It was suggested that the dried sludge would make a very desirable fuel owing to the fat in it, but this idea met with no favour. The proposal to use it for producing gas for power purposes or as an illuminant was equally cold-shouldered.

The Grossmann process, however, adopted by the enterprising citizens of Oldham, met all difficulties. It is automatic throughout. The sludge is first allowed to settle in tanks till there is twenty per cent. of more or less solid matter deposited, which is scooped up by bucket elevators and placed in a storage tank. From there it is drawn off to feed a drying machine, and as the sludge passes through the apparatus the water is removed by heat, and at the outlet the sludge passes out dry.

Food for the Land

The fat is extracted from it with the aid of acid and steam, and finally a dry powder is left, which is of great value as a fertiliser. Farmers readily buy this, and the other products recovered from the waste are turned into wealth, to the great relief of the rates. Thus the most objectionable of all matters—sewage—is by science changed into the most valuable of substances—fertiliser for the lands that produce our food supplies.

The Americans are adopting the same system. It will be strange if most big cities and towns are not soon doing the same thing, for the money wantonly thrown into the sea, where so much sewage is dumped, is staggering.

According to Sir William Crookes, England alone is throwing away every year sixteen million tons of valuable nitrogenous material, which might be used to fertilise our farms and orchards. The annual value of this has been estimated at about £30,000,000.

HOW BIG IS AN ATOM? A Hundred Million Years to Fill a Bulb WEIGHING PARTICLES THAT CANNOT BE SEEN

An atom, as C.N. readers know, is so tiny that no microscope is ever likely to show one to the eye.

A very vivid way of indicating the minuteness of the atom has just been suggested by a professor who recently startled the scientific world by producing a temperature hotter than the hottest star and changing tungsten into helium in a moment.

An idea of how small the atom is can, he says, be obtained from the fact that if a hole could be punched in an electric-light bulb small enough to let in a million atoms of oxygen a minute it would take a hundred million years to fill the bulb.

Yet, by means of the flashes of light that accompany the wrecking of an atom, men of science can now weigh these minute particles of matter. Gradually our knowledge of the atom is increasing, and every experiment like that described brings the harnessing of the atom nearer, though perhaps it may never become an accomplished fact.

A pound of radium contains energy a thousand million times greater than a pound of coal. Coal when it is burned leaves a quantity of useless ash, but radium when broken up by the release of atoms leaves a residue of lead. When we have learned the secret of the atom we shall know the explanation of such strange scientific paradoxes.

THE INFLUENZA RUFFIAN Have We Found Him?

By Our Medical Correspondent

One of the most interesting discussions at the meeting of the British Medical Association at Glasgow not long ago was concerned with the cause of influenza.

It is supposed to be a germ disease, and it seems likely that the real culprit has at last been captured.

In 1914 a German scientist named Krux made the very interesting discovery that if the nasal discharge secreted during an acute cold in the head be filtered so as to remove all germs, the filtered fluid will still produce a severe cold in the head, and during the severe epidemic of influenza in 1918 a Japanese doctor showed that the same was the case in influenza, and that the filtered discharge from the nose was still infectious.

From these facts it might be argued that neither cold in the head nor influenza are germ diseases at all; but during the present year two scientists succeeded in showing that the nasal discharge of influenza patients still contains microbes, and that the microbes could themselves produce all the symptoms of influenza if sown on the throat or in the nose. Dr. Mervyn H. Gordon, of St. Bartholomew's Hospital, has also succeeded in finding and cultivating the tiny filter-passing micro-organisms, so that there is reason to believe that the germ of influenza has at last been found and that we are on the way to find a cure for that dangerous disease.

VOTERS AND THE VOTE A New Plan in a New State

In all civilised countries one of the greatest difficulties in the way of really representative government is getting the voters to take enough trouble to go to the poll.

The State of Czecho-Slovakia put a new plan into operation at its last election, making it compulsory for all holders of the franchise to exercise it. Over ten thousand citizens suffered the penalty of a fine of 500 crowns or a month in prison, and these can probably be relied on to vote next time!

ANIMAL STORIES FROM DORSET

A much esteemed Hampshire friend of the C.N. sends this collection of stories of animals and birds she has known. All are true.

THE CAT THAT UNDERSTOOD

Kitsey was a wonderful cat that seemed to understand everything said to her, and a good deal besides.

To look at, she was just an ordinary smooth-coated tabby. She lived at a farmhouse, though her master was not a farmer.

One room was used on Sunday for worship by the villagers, and during the week Kitsey loved to keep her kittens under the musical instrument used at the service. But on Saturday night she would carry them away, and on Monday morning bring them back again.

When Kitsey became old and cross, one of the sons meditated shooting her. A maid who was fond of her said, "Look out, Kitsey, they talk of shooting you!" Kitsey took the warning, went away, and was never seen again.

THE HORSE THAT MADE ITSELF SMALL

Who that owned and loved horses can ever forget the terrible time at the beginning of the war, when agents were sent round to every nook and corner to find out suitable horses?

There were sad hearts when the day arrived for our stables to be invaded. One pet we were sure of, for he was an unsuitable colour—grey; but for another we had no hope. The moment came at last, and he was brought out to be measured. Then, wonderful to relate, he stretched himself out, just as he had done in his younger days, when he had competed for and won many prizes. By so doing he reduced his height so much that he did not quite reach the standard.

How quickly the groom came round to share his joy with those who had so deeply shared his anxiety!

MISCHIEVOUS JACKDAWS

One spring a number of new plants were put in the garden, each plant bearing its name on a label beside it. Soon after the gardener asked me if I had pulled up some of the labels. I answered, rather indignantly, "Why should I take your labels?" He then said it must have been done by one of the errand boys who called.

A long time afterwards the gas-stove in the drawing-room would not work, and when the register was forced back, down came a bushel of pieces with which the jackdaws had been making a nest, and among them were the lost labels with the names of the flowers.

After that the register was kept open, for jackdaws are too clever to build where they see a light coming through.

THE SPARROWS

On the front of the stable grew some ivy, and in it slept about 40 sparrows. I fed them three times a day, and put out pans of water for them. But about 50 sparrows came for the meals, ten of them being birds that could not find room in the ivy, and so used to sleep in trees in the garden, where hundreds of other sparrows put up for the night.

Many a time I saw our few sparrows in the trees join their comrades at breakfast, but they never brought their neighbours. If they had done so we should have had a plague of sparrows.

And then how punctual they were! Exactly at ten o'clock they would send one of their number to the dining-room window to remind me that time was up. The same sparrow always undertook this duty; I knew him by a white feather in his wing.

Every autumn, when the corn was cut, the sparrows went off harvesting, and a morning would come when the bread lay on the ground untouched. Then we knew we should see our little friends no more until the corn was gathered in.

MIGRATION DISCOVERIES

Birds that Go the Long
Way Round

OBSERVERS IN AEROPLANES
AND BALLOONS

The old idea that birds on migration travel at very great heights has been exploded by recent observations made from balloons and aeroplanes, and by information systematically gathered from marked birds.

Frequently the birds travel very near the surface of the earth, and very rarely do they fly more than three thousand feet up, while the highest at which migrating flocks have ever been authentically observed is seven thousand feet, or less than a mile and a half. No doubt the intense cold at great heights prevents the birds flying at these altitudes.

The study of migration by marking birds with addressed metal rings placed round one of the legs, so that news may be obtained of their destinations, is being carried on all over the world today.

One interesting discovery has been made by German scientists. They find that there is less movement of birds between the North and South than between East and West. Most European birds travel in autumn first toward the Atlantic coast, then, turning southward, reach Africa by way of Gibraltar.

In Germany, where 133 different kinds of birds have been ringed, much detailed information has been gained and complete maps of the course pursued by certain varieties have been compiled.

The white storks living to the east of the River Weser fly over the Balkans, Asia Minor, and Syria to reach Africa; while the birds born west of the Weser fly over Spain to Gibraltar and to Africa.

It has also been found that the old stories of migrating birds covering enormous distances in a single night are much exaggerated. Storks and starlings, for instance, have been proved to travel only about 125 miles a day, and often less.

ATHLETICS FOR GIRLS A Committee Looks Into the Question

By Our Medical Correspondent

During the last year a committee of doctors and teachers has been considering the question of physical education for girls, and a majority of both teachers and doctors decided that suitable physical exercise is good both for the health and for the character of girls.

But girls have not so much muscular strength as boys, and their bodies are not so well suited for violent efforts, so it is advisable that girls should not play rough games like football and that they should not take part in swimming races and other strenuous contests.

Some of the teachers were of the opinion that games and sports tended to make girls selfish and unwomanly, and there is no doubt that many girls are apt to give too much energy to sports and to neglect more serious matters.

Provided that games and sports are not too strenuous and exhausting, however, and that girls do not pursue them to the detriment of their health and character, exercise is just as good for girls as for boys, and makes for physical health and mental alertness.

LARGEST BOILER IN THE WORLD Can Heat 1000 Houses

The city of Detroit has built a steam-boiler said, as is usual in America, to eclipse all others ever built.

It is capable of supplying heat to a thousand eight-roomed houses, but instead it is to be used to heat the business district of the Automobile City. It is 26 feet long, 19 wide, and 35 high, and can convert 190,000 pounds of water into steam every hour.

THE WEEK IN HISTORY

DISCOVERER OF THE PACIFIC

Sad Story of Balboa

SPAIN'S INGRATITUDE TO ITS HEROES

Sept. 24. Eliza Cook died at Wimbledon . . . 1889
 25. Balboa discovered Pacific Ocean . . . 1513
 26. Body of Columbus moved to Spain . . . 1898
 27. World's first railway opened at Darlington 1825
 28. Louis Pasteur died in Paris . . . 1895
 29. Robert Clive born at Market Drayton . . . 1725
 30. Lord Roberts born at Cawnpore . . . 1832

Every lover of English poetry knows the magnificent sonnet in which John Keats tells how he felt when he first read Chapman's translation of Homer:

Then felt I like some watcher of the skies
 When a new planet swims into his ken;
 Or like stout Cortes when with eagle eyes
 He stared at the Pacific—and all his men
 Looked at each other with a wild surmise—
 Silent, upon a peak in Darien.

But John Keats made a mistake. It was not Cortes, but Balboa, who from a peak in Darien stared at the Pacific and, first of Europeans, discovered the earth's greatest ocean.



Balboa

What a moment! Seventeen days short of 21 years after Columbus crossed 3000 miles of sea and found the western world Balboa found 6000 miles more sea separating the new lands from the eastern coasts of Asia. The day when creation thus "widened to man's view" was September 25, 1513.

It is a thousand pities that Vasco Núñez de Balboa should be deprived, in the mind of anyone, by a poet's mistake of the credit of his fine discovery.

Hero in a Barrel

A poor gentleman of Spain, he went out to the New World, and touched at Darien, the southern part of the Panama isthmus, before returning to San Domingo and settling there as a farmer. But his farming did not prosper, and he fell into debt. So, when ships were being provisioned, partly from his farm, to sail to a new Spanish settlement he hid himself in one of the casks and was carried aboard and became a stowaway. When the ship reached the settlement it was found to be abandoned, and Balboa persuaded Enciso, the commander of the expedition, to go on to Darien, and found a new town.

But quarrels broke out which ended in Enciso being deposed from the leadership and Balboa taking his place. Enciso went back to Spain; and Balboa proved very successful in extending the authority of Spain and at the same time treating the natives with kindness. But the king of Spain, whose mind had been poisoned against Balboa by Enciso's reports, ordered Balboa home.

First Sight of the Pacific

By this time Balboa had heard from the natives of "great waters" that lay to the westward. Accordingly he set out with Spaniards and natives. There were 190 Spaniards, and among them was Pizarro, who, later, was the conqueror of Peru. When they reached the summit of the central ridge of the isthmus, there lay, outspread below them, the great ocean. Balboa named it the Great South Sea, and took possession of it for the Spanish king, who gave him the title of Admiral of the South Sea.

But treachery was brewing in Spain. A Spanish don, named Davila, gained the favour of the king and was sent out to supersede Balboa in Darien. Balboa was on the Pacific side of the peninsula preparing for further discoveries. Davila enticed him back, then accused him of wishing to form a kingdom of his own, condemned him to death, and had him beheaded. And so ungrateful Spain treated Balboa even worse than it had treated Columbus.

WORLD'S ONLY HOPE

Canterbury Talks at Geneva

NOBLE WORDS FROM A FAMOUS PULPIT

By Our Political Correspondent

At a meeting of the League of Nations Assembly in Geneva, at the beginning of September, the Archbishop of Canterbury, preaching from the historic pulpit of John Calvin, spoke boldly a faith which makes the halting timidity of worldly-minded politicians and money-merchants look mean and feeble.

His text was "Seek ye first the Kingdom of God and His righteousness," and the vital questions of preventing war and of cultivating goodwill between nations were treated as frankly religious.

The Archbishop claimed that the true aim of the League of Nations is to apply the principles of the Christian to international life. By doing that, he says, a living soul will be infused into the League, but if it is not done the League will remain a piece of dead machinery.

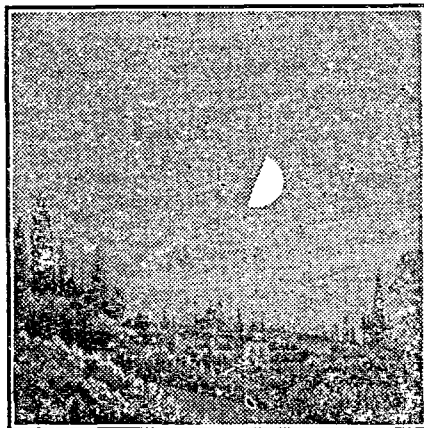
The Better Way

And is it not so? What hope is there for the world in a nation's message which says that the aim of its rulers should be to be inflexibly logical in all they do? Yet that is the voice of France. What hope is there in a nation's message which says the supreme aim of a country's rulers should be to take the course that pays best? Yet that is the tone of most politicians and masters of business.

There is a better view than either of these, and it is the view which Dr. Davidson expressed with plainness and power. There is a rightness of heart, the essence of the Christian faith, and if that rules the doings of men, of nations, or of International Leagues, all difficulties become dissolved, wrong is shamed away, and the good of the whole world replaces selfish aims.

The truest mind of Britain was most worthily expressed when Canterbury spoke from the pulpit of Geneva.

THE MOON NEXT WEEK



The moon at 8 p.m., summer time, on Sept. 27

THE WIRELESS SHIP

Old Cable Ship's Successor

Ever since the first days of the submarine telegraph there have been ships known as cable ships always at work, either laying or repairing cables. Now there has come the radio repair ship—a special ship equipped with all manner of tools and instruments and a staff of wireless engineers.

The first ship of this kind has been sent out on its first journey by the United States Navy. It is called the Gold Star, and its duty is to keep in repair ten wireless stations in Alaska. It is a 7000-ton ship, with a crew of 300 officers and men.

The wireless repair ship is likely to become as familiar a figure on the seas as the cable ship.

C.N. QUESTION BOX

Little Puzzles in Natural History

Answered by Our Natural Historian

All questions must be asked on postcards, and not more than one question on each card. Name and address must always be given.

Do Guinea-Pigs Keep Rats Away?

Unfortunately they do not. Rats visit the hutches to steal food, and sometimes kill and eat guinea-pigs.

What is Cochineal?

Cochineal is a dye obtained from the dried body of a cactus-haunting insect whose scientific name is *Coccus cacti*.

How Many Eggs do Snails Lay?

The number varies with the species. The common snail, *Helix aspersa*, lays from forty to a hundred, in little nests at the roots of grass.

How does a Snipe Bleat?

The bleating, or drumming, is believed to combine the sound of voice and of rapidly-vibrated wings as the snipe swoops from the air to the ground.

Are Any Descendants of the Mammoth Still in Existence?

The whole race of mammoths died out probably 100,000 years ago, leaving relatives in the elephants, but these are not descendants.

Why does a Lobster Change Colour when Cooked?

The temperature of the water causes a change, believed to be chemical, in the pigment of the shell, converting it from a bluish-black to scarlet.

How do Young Birds in the Nest Obtain Water?

With rare exceptions nestlings do not need water. They obtain sufficient moisture from the insects and other food carried to them by their parents.

At what Speed do Grouse Fly?

The speed can only be guessed at. It is common to speak of grouse flying down wind "like an express train." That would mean at the rate of 40 to 50 miles an hour, but part of that speed is supplied by the wind.

Is it Spring at the same time everywhere in the Northern Hemisphere?

No; there is a difference of several weeks even in Great Britain. Spring marches from south to north at the rate of four miles a day, and does not reach the Arctic till the end of May.

What is a Sea Unicorn?

There is no such thing as a unicorn, but the name sea unicorn is foolishly given to the narwhal, a whale which has one of the canine teeth modified into a long tusk, suggesting the single horn of the imaginary unicorn.

How High is a Full-Grown Lion?

Adult lions differ in height and length. One example, measuring less than 9 feet in length, was 3 feet 6 inches—Shetland pony size—high at the shoulder; while a 10-foot specimen was only 3 feet 2 inches in height.

What is the Difference Between an Alligator and a Crocodile?

The alligator's head is shorter and broader than that of the crocodile, and its first and fourth teeth of the lower jaw bite into pits in the upper jaw, whereas in the crocodile the fourth lower tooth bites into a groove in the upper.

Is there any Parallel in Nature to the Moulting of a Bird's Feathers?

Birds alone have feathers, but crustaceans moult their shells, reptiles and caterpillars and hosts of other larvae cast their skins, mammals cast their hair, and in human beings the outer skin is constantly wearing away and being renewed.

Newspaper Notes and Queries

What is Protoplasm? The simplest form of living matter, the so-called physical basis of life.

What are Petiole Cavities? The petiole is a botanical term for a leafstalk, the footstalk of a leaf connecting the blade with the stem, and the cavities are minute openings in this.

What does Sc. mean on the base of a statue? It is short for sculpsit, meaning chiselled, or engraved, and appears after the artist's name. Similarly Pinx., short for pinxit, means painted.

VAST SPACES OF THE UNIVERSE

HOW STAR DISTANCES ARE MEASURED

The Two Systems Used by Astronomers

LAMPS IN THE SKY

By Our Astronomical Correspondent

High up in the southern sky, almost midway between the horizon and overhead, will be seen the bright star Altair. It is a very conspicuous object and may be readily identified between two stars of medium brightness, the three being almost in a line.

The star above Altair, and about three times the Moon's apparent width away from it, is Gamma in Aquila; that about four times the Moon's diameter below Altair, and least bright of the three, is Beta in Aquila. These stars were described in detail in the C.N. of September 3-last year.

Altair is a great sun giving about ten times the light of our Sun, and its light takes but 14 years to reach us. Beta also is a sun, apparently larger than ours, since it radiates about five times as much light, which takes 46 years to reach us.

Earth's Orbit as a Base

But Gamma is estimated by astronomers to be very much larger than the others, judging from its luminosity and taking into account its enormous distance. Recent revised calculations show it to be so far away that its light takes 95 years to get here, and that it is, therefore, some 6,200,000 times as far away as our Sun.

This conclusion has been arrived at by direct trigonometrical measurement, with the diameter of the Earth's orbit as a base line; but the spectroscopic method, which is based upon the intensity of certain lines in the star's light when analysed by the spectroscope, and also upon what is called the *absolute*, or real, brilliance of the star as compared with its *apparent* brilliance as seen at this enormous distance, also enables expert astronomers to calculate the distances of stars and star clusters with surprising accuracy.

Using the Spectroscope

The principle of this spectroscopic method may be easily grasped by looking at a long row of lamps extending into the far distance, so that they appear gradually to get fainter and fainter. Now, if the actual brilliance of one of these lamps be known, then the difference between its actual brilliance and apparent brightness as it appears to the observer enables its distance to be ascertained. The stars are like lamps in the sky.

In practice there are many complicating factors to be very accurately measured and allowed for, and all depends upon a very correct estimate of the actual brilliancy, or absolute magnitude, as astronomers say, of the star itself, and also on the nature of the lines in the star's spectrum; but photometry, the method by which the star's light is measured, has been brought to a degree of great precision.

Checking the Figures

The spectroscopic method of measuring has shown Beta in Aquila to be about 101 light years distant, or about 6,600,000 times as far as our Sun, whereas we saw the trigonometrical method gave about 6,200,000 times. Thus two totally different methods of measurement give a result fairly in accord, taking into account the vast space to be measured and the exceedingly minute and complicated nature of the calculations.

Examples like these—and there are many in which the results are even more in accord—prove conclusively that the eccentric conceptions of curved space and, lines of measurement associated with Professor Einstein's Theory of Relativity have really very little practical effect, if any, on the realities of astronomy.

G. F. M.

THE HOUSE OF SILENCE

A School Story With a Mystery

Told by T. C. Bridges,
the C.N. Storyteller

What Has Happened Before

Raymond Cartwright, a newcomer to the Fourth Form at Charminster, is befriended by Jimmy Clayton.

A bully named Arden is the victim of a practical joke by Clayton, who is in consequence kept under detention for an hour. Meanwhile, Arden and two of his friends, Bulmer and Hogan, capture Raymond and let him down a dry well in the bucket. He escapes through a tunnel leading from the well to a ditch outside the school wall.

When Clayton is released from detention he is surprised to see Raymond running away from the school. He catches him, and they return together, to find the gates locked. The two boys get back through the passage to the well, and Jimmy plans to scare Arden and his friends by wrapping himself in a white sheet and being hauled up in the bucket. At dusk, when the bullies return to the well to release their victim, they are terror-stricken by the ghostly figure that leaps at them.

Next day Raymond is again caught by Arden, Bulmer, and Hogan, and because he will not tell them of Jimmy's share in the well incident, they throw him into the river.

CHAPTER 8 Ray Runs for It

THE very last thing that Arden and his gang had expected was that Ray could swim.

But Ray, who had spent the previous year with his father in Italy, and enjoyed hours in the warm sea off Capri, had learned to swim extremely well. In fact, it is safe to say that there was not another boy of his age at Charminster who could rival him in the water. True, the river was horribly cold, but in a moment the instinct of the swimmer brought him to the surface, and he struck out hard for the opposite bank.

Arden, Hogan, and Bulmer stared for an instant in speechless amazement. Here was their prey escaping them, and they had not got a word out of him. Arden was the first to find his voice.

"Why—why, he can swim!" he gasped.

"He certainly can," answered Hogan, drily, "and a jolly sight faster than you or me."

"But he hasn't told us. We haven't got a word out of him."

"And we shan't, unless we catch him," said Hogan. "There's only one thing to do. Come on to the bridge. We've got to collar him before he gets round by the upper road. There'll be the mischief to pay if any master sees him going back into Coll. all dripping like that."

As he spoke he started off at a run, and the other two followed. There was a foot-bridge only about three hundred yards below, and the bullies made for it as hard as they could. But by the time they reached it Ray was already across the river and was standing, streaming, on the bank, trying to wring the water from his sopping clothes. Glancing round, he caught sight of the three just crossing the bridge, and was off like a shot.

Ray put his best foot foremost, but his wet clothes hung heavy on him, and the swim in itself had winded him badly.

In spite of his best efforts his pursuers gained rapidly. It was a water-meadow he was crossing, a stretch of low, boggy ground, with here and there patches of tall reeds or osiers. Ray ran in and out among these, heading straight as he could for the bridge above. But the bullies kept on gaining, and his heart sank as he began to realise that he could never get away from them. He spurted once more, but by this time he was panting for breath, and a nasty stitch in his side was hurting abominably. Just then, Ray suddenly felt his feet

sinking into soft mud, and with a fresh shock of horror found that he had run into a patch of real bog.

The soft mud squelched beneath him, his feet sank over his boot-tops in clinging black slime and, worst of all, ugly tremors made the whole surface quiver, showing that the bog was deep and really dangerous. Arden gave a shout. "We've got him. Come on, Hogan."

Ray dared not look round, but he plainly heard the splash of his pursuers' boots as they struck the boggy patch. As for himself, all his remaining energies were needed for jumping from one patch of reeds to another to escape the patches of black slime between the tufts.

"Look out, you chaps!" It was Hogan's voice. "It's not safe!"

Next instant came a heavy splash, then a shriek:

"Help! Help! I'm sinking!"

Ray never stopped. To his intense relief he saw that he had nearly reached the far side of the slough. Half a dozen jumps, and he was on firm ground. Then at last he did venture to look round.

Terrified as he was, he could hardly help laughing, for there was the fat Bulmer up to his waist in the black mud. He was struggling like a bogged bull, but seemingly fixed as tight as glue.

CHAPTER 9 "Slogger" Flower

ARden and Hogan had got back to the edge of the bog, out of danger. Arden was in a flaming rage, and called Bulmer all sorts of names. But Ray did not stop to listen. He set off again for the bridge, and with a sigh of deepest relief found himself safe across it and on the road leading back to the school.

"What's up, Cartwright? How ever did you get so wet? Did you fall into the river?"

Ray pulled up short as he came face to face with Jimmy Clayton and Bob Dane. They had evidently been for a walk down the river, and had just come up through a gate leading out of the water meadows, on the other side of the road.

"I—er—" stammered Ray, then pulled himself together. "No, I didn't fall in. Arden and Bulmer and Hogan chuckled me in."

Jimmy was enormously interested, and soon got the whole story out of him.

"You swam across, and left Bulmer in the bog?" chuckled Jimmy in high delight, as Ray ended. "Oh, splendid! Topping! You've done 'em in the eye this time, Cartwright. When the story gets round the school everyone will be jeering at them. Isn't it a great score, Bob?"

"Top hole!" agreed Bob, beaming. Then he suddenly turned grave. "But, look here, Jimmy. Cartwright will get beans if he turns up in Coll. like this. We must get him in on the quiet. I'll go ahead and scout. See here, I'll send Slade on some errand, then Cartwright and you can slip in safely."

Bob ran off, and Jimmy and Ray followed more slowly.

"Who's Slade?" asked Ray.

"The gate porter. A bit of a swab. He'd sneak to the Head if he saw you coming in like this. But it's all right. There's Bob signalling that the coast is clear."

Between them Jimmy and Bob got Ray safely to a change-room. Before they left him, they fetched dry clothes for him.

Ray was immensely cheered by their kindness, but rather puzzled, all the same, for he did not realise that he had done anything out of the way. He did not say much, however, for he was feeling shaky and chilly and anything but fit.

Just as he had finished dressing, the school bell rang, and meeting Jimmy and Bob in the Quad, the boys went off together. They had nearly reached their class-room when Jimmy pulled up.

"There they are," he whispered, pinching Ray's arm. "Look! Do look at them, especially Bulmer!"

He went off into a fit of silent laughter, and so did Bob. No wonder, for Arden and Hogan were mud to their waists, while Bulmer looked as if he had been taking a bath in it. Even his face was plastered with black mire.

Half the school, hurrying across to their form rooms, stopped to look at them. The three bullies fairly bolted to their dormitory, pursued by shrieks of laughter.

"Slogger Flower will give them token for being late," said Jimmy joyously, as the three settled to their places in form. Next minute in came the master.

Mr. John Flower, of the Lower Fourth, was the most popular master at Charminster, and at the same time the most feared. Nearly six feet high, he was immensely broad-shouldered and deep-chested, and it was his muscular strength that had given him his nickname of Slogger.

He had a big head, with a mass of thick hair, grey eyes which could be full of fun or fearfully stern, and a deep, booming voice. His temper was desperately quick, and would sometimes cause him to punish with undue severity. But, on the other hand, he had a wonderful sense of justice, and when he had been hasty he was never above saying so.

To add to it all, he was one of the most generous men alive, a fine cricketer, and a good sportsman. No wonder the unruly Lower Fourth loved as well as feared him.

The lesson began at once. This was history hour; and it was Mr. Flower's habit to ask questions, quick as a flash, from one boy after another. Presently Ray's turn came.

"Date of the Great Fire of London?"

Ray was silent.

"What's the matter, Cartwright? Didn't you hear me?"

"Yes, sir," said Ray, in a low voice.

"Then answer. What was the date of the Great Fire?"

No reply. Mr. Flower's quick temper flared.

"Haven't you learned your lesson?"

"No, sir."

"What! You have the impertinence to tell me you have not learned your lesson? Then write out the two pages five times, and bring it to me tomorrow evening. And go to the bottom of the form."

Ray got up slowly; then suddenly and quite silently he slipped down in a heap on the floor.

For a moment there was dead silence, and, before anyone else could move, Mr. Flower had leaped across the room and picked up Ray in his arms.

"The boy has fainted," he said. He swung round on the others.

"You young idiots!" he roared.

"Why didn't you tell me the poor lad was ill?" He started for the door, then stopped. "Clayton, run for Doctor Wade. Tell him to come straight to my room. Skip!"

CHAPTER 10

Jimmy Gets a Present

NEXT morning, when Jimmy Clayton met Bob Dane at breakfast, Bob's first question was:

"How's Cartwright?"

"Pretty bad," replied Jimmy. "He's got a chill, and Wade says he's afraid of pneumonia."

Bob pursed his lips.

"That's rotten. I hope he pulls through all right. I believe there's something in that kid, even if he does look like a mother's darling."

"He hasn't got any mother," replied Jimmy gravely. "And his father's abroad. See here, Bob, when he gets better I vote we give him a leg up."

Bob nodded. "I'm with you, old son. We'll do what we can."

Just then Slade came along, carrying the morning post. The gate porter was a big, heavily-built man, with a bald head, narrow eyes, and beetling eyebrows. The boys disliked him, but he was a good servant.

"Parcel for you, Mr. Clayton," he said, handing over a huge parcel two feet long and a foot thick.

"Help, Jimmy! What have you got there?" demanded Bob. "Is that tuck?"

"No." Jimmy's eyes were glistening with excitement. "It's better than tuck. Don't talk about it. I'll tell you afterwards."

The moment they were out of Hall, Jimmy led Bob off to the box-room.

"It's those chemicals my Uncle Nicholas promised me," he said eagerly, as he cut the string. "I say, isn't it topping of him? Just what I wanted."

"But where are you going to keep them?" asked the practical Bob. "You can't do experiments here or in class room."

"No." Jimmy looked round to make sure no one was in earshot. "But I've got a place all right. I'm going to show you, Bob, for I can trust you not to give it away."

"I'm mum," declared Bob.

"Then come on," said Jimmy, and led the way out of the gates, round behind the bathing place and the masters' gardens, until they came to the old wall with its deep ditch. Here Jimmy pulled up and looked round.

"Don't want anyone to spot us," he said, then slipped quietly into the thick shrubbery close by.

"What, not the haunted house?" exclaimed Bob.

"It'll be a bit more haunted before I've done with it," chuckled Jimmy, as he took his pal round to the back. "I've found a window I can open," he went on, "and there's an old kitchen which is top-hole for a laboratory. It's half underground, too, so there won't be much chance of being spotted."

"It's a great notion," declared Bob, as he followed Jimmy down into a big, stone-floored room with dusty windows and a rusty range.

Here Jimmy stowed his chemicals in a cupboard, and, after padlocking the door of it, the two crept out.

As they came back into the quadrangle, they ran right into Arden, who pulled up and glared at them unpleasantly.

"Where's young Cartwright?" he demanded.

"In the sick room," Jimmy answered curtly.

"Oh, he's shamming, is he?" sneered Arden.

"Shamming! You jolly well know better than that," replied Jimmy hotly.

"I know it's jolly convenient for the young thief to have sneaked into hospital," said Arden.

"Thief!" repeated Jimmy.

"What do you mean?"

"Just what I say. Bulmer found three half-crowns missing from the pockets of his trousers that were hung up in the change-room, and Cartwright was the only fellow there between the time Bulmer left and we three came back."

TO BE CONTINUED

Five-Minute Story

Open the Gates

THE Duke of Monmouth is taken! The news hath just arrived, Dame Lisle—taken like a tired, beaten dog in a ditch across the Dorset border. Zounds! 'Tis the block for his head now instead of a crown!

"The Lord have mercy on him," Dame Alice Lisle said gently. Her heart was loyal to King James, but it ached for the unfortunate.

The messenger who had brought the tidings drew nearer and whispered:

"Take care! The valley is full of fugitives from Sedgemoor, and it is said the King hath spies abroad. Those who are too pitiful, Dame, may also have to ask for the Lord's mercy. If a knocking comes at the gates of Moyles Court, take care, I say."

That night a storm raged in the Avon valley, and Dame Alice Lisle, in the peaceful safety of her home, was full of compassion for weary travellers.

"My lady, there is a knocking at the gates!"

"Then open them."

"My lady, 'tis the Duke's followers, flying from Sedgemoor. If we harbour them 'tis death, and they say the King hath no mercy!"

"Open the gates. We are servants of the Lord as well as servants of the King, and must be merciful."

The gates of Moyles Court were opened wide to the weary fugitives; and it was Dame Alice herself who, with gentle hands, attended to their comfort.

But not many hours passed before there was another knocking at the gates—the knocking of the King's men, who seized the fugitives, and Dame Alice too.

To Winchester they took her, where in calm patience she awaited her trial.

Three times the jury brought in a verdict of acquittal. Dame Alice was loyal, though it was true she had sheltered the King's enemies. Three times did the infamous judge Jeffreys, with vile threats and abuse, drive them back till they gave the verdict he desired. Then he sentenced Dame Alice to be burned alive at the stake.

In vain were the piteous entreaties of her friends; and a petition to King James only caused the sentence to be changed to one more merciful. She was led to Winchester market-place and beheaded on the scaffold.

There is a little church in the valley of the Avon where Dame Alice worshipped, and in its quiet churchyard they laid her, writing on her tomb the simple words: "Dame Alice Lisle, dyed September 2nd, 1685."

The grass grows high round it, and the little speedwell holds up its blue, smiling face to cheer any dusty wayfarer who passes by and bid him speed well on his journey—a lovely emblem for one who never failed to open her gates to weary travellers and speed them on their way.

FREE

PATTERNS FOR FIVE DESIGNS



Tell mother not to miss the splendid October number of "Children's Dress," now on sale. Patterns to make a Froch and Coat for the Schoolgirl, a Suit and Coat for the Schoolboy, and a Tunic Suit and Coat for the small girl and boy are GIVEN FREE inside every copy

HARMSWORTH'S

CHILDREN'S DRESS • 4½D.



He Is Rich That Wants Nothing



DI MERRYMAN

A SPEAKER, waxing eloquent, was carried away by his feelings, and exclaimed, warmly:

"Comrades, let us be up and doing. Let us take our axes on our shoulders, and plough the waste places till the good ship Temperance sails gaily over the land."

What Am I?

READER, attend: a humble slave Your kind attention dares to crave.

If plurally you read my name, Or singular, 'tis still the same. My offspring's pure without offence, The sacred type of innocence. Kings, emperors, nay, all mankind, In solemn covenants I bind. Then who am I? Now, pray, declare,

And write my name with skill and care.

A Tongue Twister

THERE was a young fellow named Tait,

Who dined with his girl at 8.8.;

As Tait did not state, I cannot relate

What his tête-à-tête ate at 8.8.

The Power of the Press



A BROWNIE read a paper, A paper of the day, And shortly, with the elf on board, The paper blew away.

It soared up high into the air Above the tall tree-tops. Will it return? Well, only if Its circulation drops.

A Boating Problem

SOME members of a party who wanted to go for a row asked the boatman what he would charge. "Ninepence a head," he replied. "Will you take two more of our party and charge only eightpence each?" asked one.

The boatman thought for a moment, and then said:

"Yes; I will take you. It will not be very much harder work, and I shall gain sixpence."

How many people went for a row?



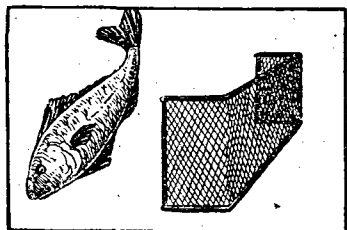
The Escapades of Johnny Crook

JOHNNY CROCK and Jumbo Joe Lined up to have a race. "Off you go!" cried Mrs. Bull; "Back here's the winning place." Johnny Crook got just in front, When round and round his tail Our young friend Jumbo put his trunk, Which made poor Johnny wail.

A Rick Trick
THERE was an old man of Limerick
Who was asked if he would trim a rick.

He cut yards off each side:
"It's smaller!" he cried.
I've never seen quite so slim a rick.

Do You Live Here?



What town does this picture represent?

WHEN is a pie in the oven like a poet?

When it's Browning.

A Dentist's Sign

A DENTIST placed over his doorway a business sign which read thus: "Teeth extracted with great pains."

This was something like the butcher's sign which ran: "Beef is very high; our prices are the same;" and the grocer's: "Don't go elsewhere to be robbed. Try us."

WHY does a cook make more noise than a gong?
Because the gong makes a din, but the cook makes a dinner.

Do You Know

THAT it is quite wrong to speak of Parcels Post, as so many people do? It should, of course, be Parcel Post. We do not speak of the Letters Post or the Books Post. That the familiar expression "Deaf as an adder" should never be used? The adder is not deaf; he can hear quite well.

That the quotation from Shakespeare's Hamlet, "Imperious Caesar dead and turned to clay," is more often than not quoted wrongly, as "Imperial Caesar," and so on?

That gleaners have no legal right to gather up the corn that is lying about after the carters have finished? They may be refused permission to glean by the farmer.

WHY is a girl mending her stockings an extraordinary sight?
Because her hands are where her feet should be.

If Three Times One Were Nine

IF the butterfly courted the bee,
And the owl the porcupine;
If churches were built in the sea,
And three times one were nine;
If the pony rode his master,
If the buttercup ate the cows,
If the cat had the dire disaster
To be worried by the mouse;
If mamma sold the baby
To a gipsy for half-a-crown;
If a gentleman were a lady—
The world would be upside down!

WHAT is it we never borrow, yet often return?

Thanks.

ANSWERS TO LAST WEEK'S PUZZLES

Built-Up Words

Man-chest-er; Hammer-smith; L-arch; Map-le.

The Patrol Leader's Problem

The mud was two feet deep. The pole was in two feet of mud and four feet of water, with twelve feet above both.

What Name Is This? Anna

Who Was He?

The Great Frenchman was Corneille

Jacko Finds a Broom

JACKO made the funniest figure in his uniform, which was, of course, much too big. But the station was so crowded that no one took much notice of him.

As he was passing the ticket-office Jacko heard the station-master shouting at the man in the box. He was bullying him because the place was so untidy.

"Why don't you get it swept up?" he asked. "Look at the floor!"

Jacko poked his head inside, and grinned. "Can't get anybody to do it!" grumbled the ticket-man. "Nonsense!" snapped the station-master. "You must find somebody!"

Then he stepped quickly back, and nearly fell over Jacko. It was a dark corner, and all he caught sight of was a little figure in a porter's cap and jacket.

"Here, you!" he cried. "Are you doing anything?"

"No fear!" said Jacko. "I mean—no, sir!"

"Then get a broom and sweep out this office! Do you hear?"

"Right-o!" said Jacko. And off he went to find a broom.

He had no idea where to look, so he hung about till he saw a porter who was carrying one, waited till he put it down for a moment, picked it up, and darted off with it.



He swept till the dust flew up in clouds.

He found plenty to sweep up. And he didn't half enjoy himself. He swept and swept till the dust flew up in clouds.

The ticket-man began to cough and choke.

"Stop that!" he shouted. "Get a basket and get rid of all that rubbish on the floor!"

"What am I to do with it?" asked Jacko.

"Don't bother me!" roared the man. "Burn it!"

Jacko instantly saw a huge bonfire in his mind's eye, and fell to with the greatest enjoyment.

Soon he disappeared, and he didn't come back for quite a long time. He had only just put his head inside the ticket-office again when the ticket-man said, without turning his head:

"If you want a job, Jim, you can sort out that parcel of tickets on the floor."

The man, named Jim, who had come in while Jacko had been away, got up and began looking round.

"Can't see any!" he said.

"On the floor in the corner," said the ticket-man impatiently.

"There's nothing on the floor but dirt," persisted Jim.

The ticket-man got down from his stool and looked round. He didn't speak for a moment, and then he nearly exploded.

"It's that idiot porter!" he exclaimed. "I told him to clear up—and he's burned the lot! Where is he?"

The head at the door had vanished.

The paragraph on the right is a French translation of the paragraph on the left

A Jackdaw's Treasures

A few birds have a mischievous love of stealing things that "catch their eye," and secreting them in some place which they regard as a storehouse. A correspondent gives the following list of things he found in a jackdaw's nest.

A folded copy of an evening paper, parts of two weekly papers and a page from a ladies' fashion book, a dozen shirt buttons, several pieces of white cloth, a button hook, two dozen hairpins, three ladies' curling pins, a blade of a pocket-knife, several steel pens, nine tops of lemonade bottles, a darning needle, the lid of a mustard tin, and a pair of eyeglasses without the glass in them.

Le Trésor du Choucas

Certains oiseaux ont une tendance malicieuse à voler les objets qui "frappent l'œil," et à les cacher en quelque endroit qu'ils considèrent comme leur magasin. Un correspondant nous envoie la liste suivante des objets qu'il a trouvés dans le nid d'un choucas.

Un exemplaire plié d'un journal du soir, des fragments de deux journaux hebdomadaires et une page d'un journal de modes, une douzaine de boutons de chemise, plusieurs lambeaux d'étoffe blanche, un tire-bouchon, deux douzaines d'épingles à cheveux, trois épingles à friser, une lame de canif, plusieurs plumes en acier, neuf capsules de bouteilles de limonade, une aiguille à repriser, le couvercle d'une boîte à mou-tarde et un pince-nez sans verres.

Tales Before Bedtime

The Boaster

BASIL and Daisy were walking to the farm to fetch eggs and honey.

"If I met a bull, I'd fight him," said Basil the boaster.

"But suppose you met a lion," said Daisy. "You would never dare to fight a lion, would you, Basil?"

"Of course I would," cried Basil. "I'm not frightened of anything."

At that moment the farmer's big billy-goat, having broken the rope that tethered him, came rushing across the field toward the children. He was a savage goat, fond of butting everyone he met.

"Oh dear!" screamed Daisy. "Oh, what shall we do?"

But Basil the boaster knew quite well what he was going to do—he was going to escape as quickly as possible.

There was a big haystack, not far away, with a ladder against it.

Basil ran to it as fast as his legs would carry him, and scrambled up, without a thought for poor little Daisy, who could not run very fast.

When Basil reached the top, he leaned over and called:

"Hurry up, Daisy," but fortunately somebody else had come to the rescue—Tom, the farmer's boy. He caught up Daisy, and threw a long rope right round the prancing billy-goat's neck.

Then he looked up at Basil peeping over the top of the stack. "Hullo, Boasting Basil," he cried. "You are a fine brave fellow!"

"I don't like billy-goats," said Basil, looking rather foolish.

"Don't you?" said Tom. "Then perhaps you had better stay where you are while I



He was a savage goat

take the billy-goat back to the farm. Come along, Miss Daisy. There is something nice in the dairy."

With a twinkle in his eye, he took away the ladder, and Basil was a prisoner.

When, by and by, they came back, and Basil was set free, he said:

"Daisy, I don't believe I could fight a lion after all; but if ever we meet a billy-goat again, I'm going to face it while you run up the ladder. I don't like Tom calling me a boaster."

The Children's Newspaper grew out of My Magazine, the monthly the whole world loves. My Magazine grew out of the Children's Encyclopedia, the greatest book for children in the world.

CHILDREN'S NEWSPAPER

September 23, 1922

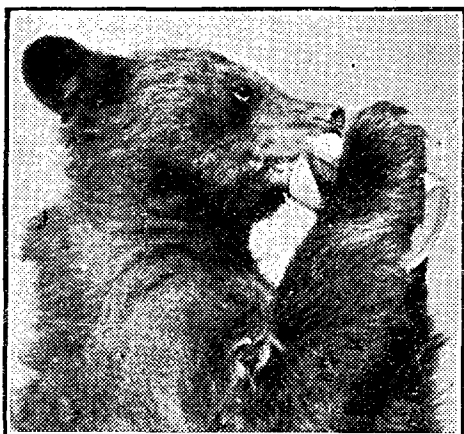
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THE BLACKBERRY HARVEST • A DONKEY MARKET • WAR FLEET FOR SALE



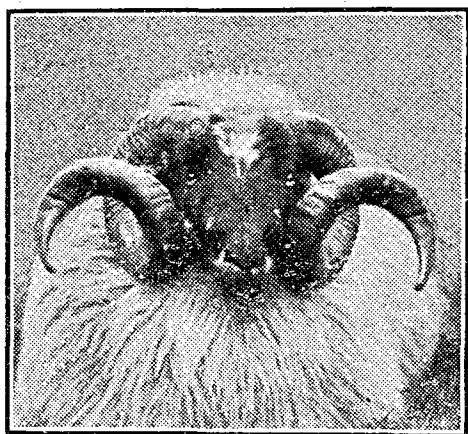
Launching the Lifeboat—While many seaside towns now have motor lifeboats, Blackpool retains the older type, which our photographer snapped as it was being launched the other day



Helping Herself—Winifred, the female bear from the Rocky Mountains, takes a drink of milk



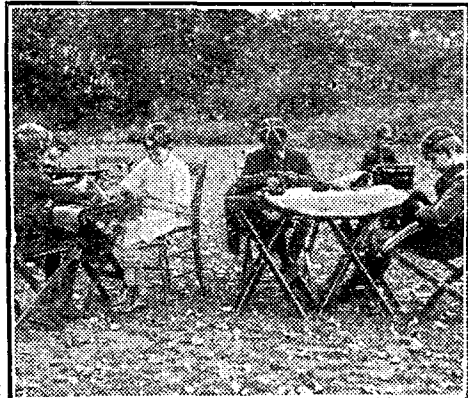
Gathering the Blackberry Harvest—All over the countryside bushes heavy with ripe blackberries are being besieged by crowds of happy children, who carry the fruit home, where it is soon made into jam for the winter. No healthier fruit is found anywhere, and it is very prolific all over the British Isles



A Prize-winner—This fine mountain ram recently won a number of prizes in a Yorkshire show



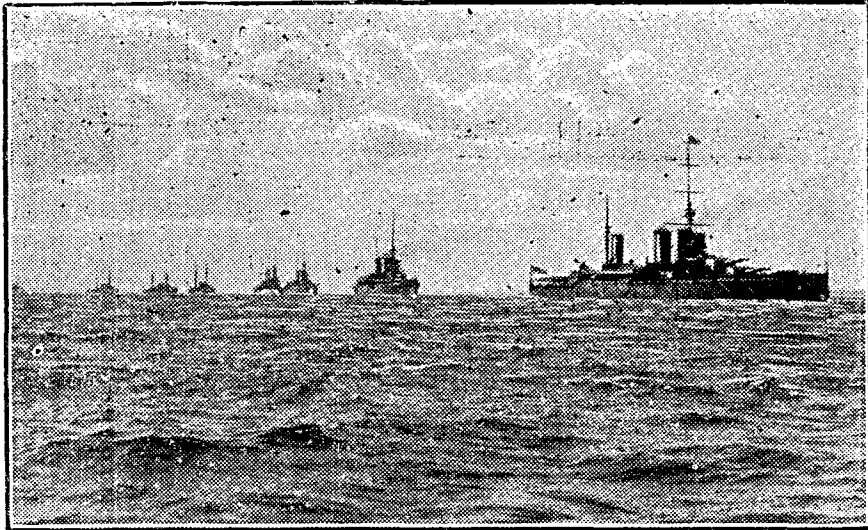
A Young Life-saver—Although only ten years old, Désirée Wheeler is an expert life-saver and a good long-distance swimmer and high diver. She is here giving a life-saving exhibition



Open-air School in St. James's Park—Many children attend open-air schools; and these boys are learning mat-making in St. James's Park, under the shadow of the Government offices



Off to the Donkey Market—A herd of donkeys going to Barnet Fair, near London, where they are sold to costermongers, who buy most of their animals at this now famous fair



A War Fleet for Sale—Some of the battleships that took part in the Great War, and are now being offered for sale. The picture shows the Lion, the Conqueror, and the Monarch

ALL THE WORLD LOVES THE C.N. MONTHLY. ASK FOR MY MAGAZINE. EDITED BY ARTHUR MEE

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